ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

Vol. 14, No. 9 — September, 1957

Table of Contents

OFFICERS DIRECTORY 6A
SPECIAL COMMITTEES 7A
INDEX TO ADVERTISERS 43A

ORIGINAL ARTICLES

NOTES ON THE HISTORY OF CLINICAL THERMOMETRY 509
Hugh H. Smith, M.D., Tucson, Arizona (To be Continued)
THE TREATMENT OF MUMPS AND ITS COMPLICATIONS IN THE ADULT MALE. 514
Albert G. Bower, M.D., Los Angeles, California
DIAGNOSIS AND MANAGEMENT OF COMMON GYNECOLOGICAL PROBLEMS .. 518
W. J. Reich, M.D., M. J. Nechtow, M.D., & J. B. Reich. M.D., Chicago, Illinois
BILATERAL TRAUMATIC PSEUDOCYSTIC PULMONARY HEMATOMAS 521
D. W. Melick, M.D., K. H. Thayer, M.D., D. M. Rowe, M.D., Phoenix, Arizona

THE PRESIDENT'S PAGE

THE PRESIDENT'S PAGE — C. C. Craig, M.D., Pres., Arizona Medical Association, Inc.. 523

EDITORIAL PAGE

INTERNISTS — ARISE 526
DOCTOR WE NEED YOUR OPINION 529

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. — Guillermo Osler, M.D. 530
ORGANIZATION PAGE — Civics — Norman A. Ross, M.D. 535
THE DIAGNOSIS OF MENTAL RETARDATION — Clarence G. Salsbury, M.D. 538
PROPOSED PROGRAM TO COMBAT ORIENTAL INFLUENZA IN THE U. S. 539
"INDUSTRIAL HEALTH" — Wm. E. Shepard, M.D. 542
STUDY SHOWS "PATCHWORK" OF CHEMICAL LAWS 545
COMMITTEE ON POISONING CONTROL — L. B. Smith. M.D. 545
PROGRESS REPORT POISON CONTROL INFORMATION CENTER 547
AMERICAN CANCER SOCIETY RESEARCH 547
450,000 IN ARIZONA COVERED BY VOLUNTARY HEALTH INSURANCE 550
LOCATION OPPORTUNITIES 550
LOCATION INQUIRIES RECEIVED 551
THE ROLE OF THE DOCTOR IN BLUE SHIELD 554
VA USING NEW REHABILITATING TREATMENT 528
EISENHOWER SIGNS REVISED DOCTOR DRAFT BILL 528
THE U. S. COMMITTEE OF THE WORLD MEDICAL ASS'N. 536
NATIONAL LIBRARY OF MEDICINE 567

NEW FILMS AVAILABLE

AMA PRODUCES NEW FILM FOR THE PUBLIC 554
MENTAL HEALTH FILMS AVAILABLE FROM AMA 555
5 NEW FILMS BY THE NAT'L. FOUNDATION FOR INFANTILE PARALYSIS 555

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB — M. W. Merrill, M.D., Phoenix, Arizona 556

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION CONVENTION REPORT — Mrs. Charles S. Powell 566

DIRECTORY

LABORATORIES 45A
SANATORIUM DIRECTORY DRUGGISTS DIRECTORY 47A
PHYSICIANS DIRECTORY 49A

Published monthly by the Arizona Medical Association. Business office at 321 Mayer Heard Building, Phoenix, Arizona. Subscription $5.00 a year, single copy 50c. Entered as second class matter March 1, 1921, at Postoffice at Phoenix, Arizona, Act of March 3, 1879.

(The Editors of the Journal assume no responsibility for opinions expressed in the articles contributed by individual authors.)

Directory

THE ARIZONA MEDICAL ASSOCIATION, INC.
Organized 1892 826 Security Building
234 NORTH CENTRAL AVE., PHOENIX, ARIZONA

OFFICERS AND DIRECTORS

Carlos C. Craig, M.D. ..... President
1313 North Second Street, Phoenix, Arizona
W. R. Manning, M.D. ..... President-Elect
770 North Country Club Rd., Tucson, Arizona
Dermont W. Melick, M.D. ..... Vice President
1005 Professional Building, Phoenix, Arizona
Leslie B. Smith, M.D. ..... Secretary
1130 East McDowell Rd., Phoenix, Arizona
Clarence E. Yount, Jr., M.D. ..... Treasurer
105 North Cortez, Prescott, Arizona
Lindsay E. Beaton, M.D. ..... Speaker of the House
1650 Nort hCampbell Avenue, Tucson, Arizona
Jesse D. Hamer, M.D. ..... Delegate to AMA
910 Professional Building, Phoenix, Arizona
Robert E. Hastings, M.D. ..... Alternate Delegate to AMA
1014 North Country Club Rd., Tucson, Arizona
Darwin W. Neubauer, M.D. ..... Editor-in-Chief
720 North Country Club Rd., Tucson, Arizona

DISTRICT COUNCILORS

Joseph Bank, M.D. ..... Central District
800 North First Ave., Phoenix, Arizona
G. Robert Barfoot, M.D. ..... Central District
1313 North Second St., Phoenix, Arizona
Frank W. Edel, M.D. ..... Central District
738 East McDowell Rd., Phoenix, Arizona
Paul B. Jarrett, M.D. ..... Central District
2021 North Central Ave., Phoenix, Arizona
Donald F. DeMarse, M.D. ..... Northeastern District
Box 397, Holbrook, Arizona
Walter Brazie, M.D. ..... Northeastern District
Masonic Building, Kingman, Arizona
Frederick W. Knight, M.D. ..... Southeastern District
618 Central Avenue, Safford, Arizona
Walter T. Hileman, M.D. ..... Southern District
20 East Ochoa, Tucson, Arizona
William B. Steen, M.D. ..... Southern District
116 North Tucson Boulevard, Tucson, Arizona
James T. O'Neil, M.D. ..... Southwestern District
113 West Second Street, Casa Grande, Arizona

COUNCILOR AT LARGE

A. I. Podolsky, M.D. ..... Past President
1601 Fifth Avenue, Yuma, Arizona

STANDING BOARDS — 1957-58

PROFESSIONAL BOARD: Robert H. Cummings, M.D., Chairman (Phoenix); Edward H. Bregman, M.D. (Phoenix); Orin J. Farness, M.D. (Tucson); T. Richard Gregory, M.D. (Phoenix); Ronald S. Haines, M.D. (Phoenix); Joseph M. Kinkade, M.D. (Tucson); Daniel W. Kittredge, Jr., M.D. (Flagstaff); Charles S. Powell, M.D. (Yuma); Norman A. Ross, M.D. (Phoenix); Stuart Sanger, M.D. (Tucson); Milton C. F. Semoff, M.D. (Tucson); John M. Vivian, M.D. (Phoenix); Lowell C. Wormley, M.D. (Phoenix).

PUBLIC RELATIONS BOARD: Donald A. Polson, M.D., Chairman (Phoenix); Harry S. Beckwith, M.D. (Winslow); Paul H. Case, M.D. (Phoenix); W. Scott Chisholm, M.D. (Eloy); Max Costin, M.D. (Tucson); Donald F. DeMarse, M.D. (Holbrook); Paul B. Jarrett, M.D. (Phoenix); Leo J. Kent, M.D. (Tucson); Herbert C. Kling, M.D. (Yuma).

STANDING COMMITTEES — 1957-58

GRIEVANCE COMMITTEE: A. I. Podolsky, M.D., Chairman (Yuma); Walter Brazie, M.D. (Kingman); W. Albert Brewer, M.D. (Phoenix); Howard D. Cogswell, M.D. (Tucson); Robert E. Hastings, M.D. (Tucson); Oscar W. Thoeny, M.D. (Phoenix); Otto E. Utzinger, M.D. (Scottsdale).

HISTORY AND OBITUARIES COMMITTEE: Howell S. Randolph, M.D., Historian (Phoenix); Nelson C. Bledsoe, M.D. (Tucson); Robert S. Flinn, M.D. (Phoenix); Darwin W. Neubauer, M.D. (Tucson); Leslie B. Smith, M.D. (Phoenix).

INDUSTRIAL RELATIONS COMMITTEE: Lindsay E. Beaton, M.D., Chairman (Tucson); Philip G. Derickson, M.D. (Tucson); Francis M. Findlay, M.D. (San Manuel); Joseph Saba, M.D. (Bisbee); Leo L. Tuveson, M.D. (Phoenix).

LEGISLATION COMMITTEE: Millard Jeffrey, M.D., Chairman (Phoenix); Jesse D. Hamer, M.D., Chairman Emeritus (Phoenix); Nicolo V. Alessi, M.D. (Douglas); Floyd B. Brallier, M.D. (Wickenburg); Walter Brazie, M.D. (Kingman); M. Bruce Crow, M.D. (Mesa); John A. Eisenbeiss, M.D. (Phoenix); Orin J. Farness, M.D. (Tucson); Carl H. Gans, M.D. (Morenci); John C. Godbey, Jr., M.D. (Morenci); Juan S. Gonzalez, M.D. (Nogales); William N. Henry, M.D. (Grand Canyon); Robert V. Horan, M.D. (Miami); Chalmers D. Johnson, M.D. (Coolidge); William H. Marlow, M.D. (Prescott); W. Shaw McDaniel, M.D. (Phoenix); Giles G. Merkel, M.D. (McNary); Donald E. Nelson, M.D. (Safford); Warren J. Nelson, M.D. (Safford); Wallace A. Reed, M.D. (Phoenix); Reed D. Shupe, M.D. (Phoenix); A. C. Stevenson, M.D. (Phoenix); Lavern D. Sprague, M. D. (Tucson); John F. Stanley, M.D. (Yuma); Myron G. Wright, M.D. (Winslow).

MEDICAL DEFENSE COMMITTEE: Ernest A. Born, M.D., Chairman (Prescott); Preston T. Brown, M.D. (Phoenix); Harold W. Kohl, M.D. (Tucson).

MEDICAL ECONOMICS COMMITTEE: Stuart Sanger, M.D., Chairman (Tucson); Frank W. Edel, M.D. (Phoenix); Paul B. Jarrett, M.D. (Phoenix).

PUBLISHING COMMITTEE: Darwin W. Neubauer, M.D., Chairman (Tucson); R. Lee Foster, M.D. (Phoenix); Frederick W. Knight, M.D. (Safford); Donald E. Nelson, M.D. (Safford).

SCIENTIFIC ASSEMBLY COMMITTEE: W. R. Manning, M.D., Chairman (Tucson); Joseph Bank, M.D. (Phoenix); David E. Engle, M.D. (Tucson); Francis M. Findlay, M.D. (San Manuel); Charles H. Karr, M.D. (Safford); Donald E. Nelson, M.D. (Safford); Darwin W. Neubauer, M.D. (Tucson); E. Henry Running, M.D. (Phoenix); Robert A. Stratton, M.D. (Yuma); Ashton B. Taylor, M.D. (Phoenix).

SPECIAL COMMITTEES — 1957-58

AIR POLLUTION COMMITTEE: George G. McKhann, M.D., Chairman (Phoenix).

ARIZONA AMEF COMMITTEE: Harold W. Kohl, M.D., Chairman (Tucson); James J. Berens, M.D. (Phoenix); Hayes W. Caldwell, M.D. (Phoenix); Arthur V. Dudley, Jr., M.D. (Tucson); Clarence H. Kuhlman, M.D. (Tucson); William A. Phillips, M.D. (Yuma).

BENEVOLENT AND LOAN FUND COMMITTEE: Ernest A. Born, M.D., Chairman (Prescott); Preston T. Brown, M.D. (Phoenix); Donald K. Buffmire, M.D. (Phoenix); Leslie B. Smith, M.D. (Phoenix); Clarence E. Yount, Jr., M.D. (Prescott).

BLOOD BANK COMMITTEE: Ralph H. Fuller, M.D., Chairman (Tucson); D. W. Melick, M.D. (Phoenix); Paul J. Slosser, M.D. (Yuma).

CENTRAL OFFICE ADVISORY COMMITTEE: C. E. Yount, Jr., M.D., Chairman (Prescott); Jesse D. Hamer, M.D. (Phoenix); James T. O'Neil, M.D. (Casa Grande); Leslie B. Smith, M.D. (Phoenix); William B. Steen, M.D. (Tucson).

CIVIL DEFENSE COMMITTEE: Ruland W. Hussong, M.D., Chairman (Phoenix); Ernest A. Born, M.D. (Prescott); Ben P. Frissell, M.D. (Phoenix); John W. Kennedy, M.D. (Phoenix); Donald E. Nelson, M.D. (Safford); William A. Phillips, M.D. (Yuma); Roy O. Young, M.D. (Flagstaff).

CONSTITUTION AND BY-LAWS COMMITTEE: Paul B. Jarrett, Chairman (Phoenix); Lindsay E. Beaton, M.D. (Tucson); Miguel A. Carreras, M.D. (Tucson); Carl A. Holmes, M.D. (Phoenix); Leslie B. Smith, M.D. (Phoenix).

DOCTORS RETIREMENT AND INVESTMENT COMMITTEE: Oscar W. Thoeny, M.D., Chairman (Phoenix); G. Robert Barfoot, M.D. (Phoenix).

INSURANCE INVESTIGATING COMMITTEE: D. W. Melick, M.D., Chairman (Phoenix); David E. Engle, M.D. (Tucson); Arthur V. Dudley, M.D. (Tucson); Howard C. Lawrence, M.D. (Phoenix); Paul L. Singer, M.D. (Phoenix); Noel G. Smith, M.D. (Phoenix); William B. Steen, M.D. (Tucson).

LEGAL SERVICES COMMITTEE: Oscar W. Thoeny, M.D., Chairman (Phoenix); D. W. Melick, M.D. (Phoenix); Marriner W. Merrill, M.D. (Phoenix); Morris E. Stern, M.D. (Phoenix); C. E. Yount, Jr., M.D. (Prescott).

MEDICAL SCHOOL COMMITTEE: D. W. Melick, M.D., Chairman (Phoenix): Thomas H. Bate, M.D. (Phoenix); Ian M. Chesser, M.D. (Tucson); Don E. Matthiesen, M.D. (Phoenix); Darwin W. Neubauer, M.D. (Tucson).

MEDICARE ADJUDICATION COMMITTEE: Frank W. Edel, M.D., Chairman (Phoenix); Joseph Bank, M.D. (Phoenix); James D. Barger, M.D. (Phoenix); Lindsay E. Beaton, M.D. (Tucson); W. Albert Brewer, M.D. (Phoenix); Robert E. Hastings, M.D. (Tucson); Paul B. Jarrett, M.D. (Phoenix); C. C. Piepergerdes, M.D. (Phoenix); Robert A. Price, M.D. (Phoenix); E. Henry Running, M.D. (Phoenix); Stuart Sanger, M.D. (Tucson); Morris E. Stern, M.D. (Phoenix); Laddie L. Stolfa, M.D. (Phoenix); Ashton B. Taylor, M.D. (Phoenix); Charles E. Van Epps, M.D. (Phoenix).

MEDICARE COMMITTEE: Frank W. Edel, M.D., Chairman (Phoenix); G. Robert Barfoot, M.D. (Phoenix); Ernest A. Born, M.D. (Prescott); Walter T. Hileman, M.D. (Tucson); Paul B. Jarrett, M.D. (Phoenix): ADVISORY TO MEDICARE — Walter D. Bigford, M.D. (Kingman); William E. Bishop, M.D. (Globe); Edward H. Bregman, M.D. (Phoenix); Ellis V. Browning, M.D. (Springerville); W. Scott Chisholm, M.D. (Eloy); Charles B. Daniell, M.D. (Morenci); Orin J. Farness, M.D. (Tucson); C. Herbert Fredell, M.D. (Flagstaff); T. Richard Gregory, M.D. (Phoenix); Ronald S. Haines, M.D., (Phoenix); Delmar J. Heim, M.D. (Tucson); Robert S. Keller, M.D. (Safford); Joseph M. Kinkade, M.D. (Tucson); Daniel W. Kittredge, Jr., M.D. (Flagstaff); Leo L. Lewis, M.D. (Winslow); Charles S. Powell, M. D. (Yuma); George D. Reay, M.D. (Douglas); Kenneth Reichardt, M.D. (Yuma); Norman A. Ross, M.D. (Phoenix); Stuart Sanger, M.D. (Tucson); Milton C. F. Semoff, M.D. (Tucson); Charles S. Smith, M.D. (Nogales); Lorel A. Stapley, M.D. (Phoenix); John M. Vivian, M.D. (Phoenix); Lowell C. Wormley, M.D. (Phoenix); C. E. Yount, Jr., M.D. (Prescott).

MEDICOLEGAL COMMITTEE: Jesse D. Hamer, M.D., Chairman (Phoenix); Otto L. Bendheim, M.D. (Phoenix); Ian M. Chesser, M.D. (Tucson); John R. Green, M.D. (Phoenix); Walter T. Hileman, M.D. (Tucson); Robert A. McCulley, M.D. (Phoenix).

NURSING SERVICES, JOINT COMMITTEE ON IMPROVEMENT OF. Lucille M. Dagres, M.D., Chairman (Phoenix); Francis J. Bean, M.D. (Tucson); Bertram L. Snyder, M.D. (Phoenix).

OSTEOPATHY LIASION COMMITTEE: Reed D. Shupe, M.D., Chairman (Phoenix); Sebastian R. Caniglia, M.D. (Phoenix); David E. Engle, M.D. (Tucson); Millard Jeffrey, M.D. (Phoenix); A. I. Podolsky, M.D. (Yuma).

ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 14, NO. 9 SEPTEMBER, 1957

Original Articles

NOTES ON THE HISTORY OF CLINICAL THERMOMETRY

By Hugh H. Smith, M.D., M.P.H., Tucson, Arizona

"The whole life and practice of one man is so short and limited, as without the assistance of the past and contemporary observations of others to be of very little service to himself, and still much less to the rest of mankind." — George Martine, M.D., 1740.

NEW INSTRUMENTS sometimes leave the hands of their inventors in a nearly perfect state, but more often the seed of the invention is planted by one, cultivated by others, and the harvest gathered by subsequent workers who ignore the original sower. The origin and development of the thermometer is such a case. The task of sketching the history of the thermometer and of its application to clinical medicine is a difficult one; the original inventor is known only at second hand, and many were the contributors in the shaping of its development from a crude toy to an instrument of precision. This metamorphosis required, as will be seen from the account below, well over a century.

Weir Mitchell in his essay(1) on the subject terms the last years of the 16th and the first years of the 17th centuries as the birth era of instrumental accuracy in medicine. In Padua, "the garden spot of science," probably between 1590 and 1600 Galileo Galilei (1564-1642) designed a primitive thermoscope, which consisted of a glass bulb the size of a hen's egg, with a long stem the thickness of a straw and dipping into water. The water was made to rise part way up the tube by previous warming of the bulb to expel a portion of the air. Later Galileo substituted wine for water, which by freezing easily broke the glass tube. This instrument was not very satisfactory for measuring temperatures, as it was also affected by variations of atmospheric pressure. The extant writings of Galileo contain only a casual reference to the thermoscope, but in his correspondence with contemporaries there is evidence that he was the inventor and that he used it in his scientific investigations and sought to improve its efficiency, as he did also with the compass, the telescope, and the microscope.

Galileo made another contribution of special importance to medicine In watching the huge bronze lamp suspended on a chain swaying in the breeze in the tower of Pisa, he conceived the theory of the pendulum and timed the constancy of the swings with his own pulse. This led to the designing of an instrument which he called the pulsilogium for the timing of the pulse rate.

A Venetian noble, Giovanni Francesco Sagredo wrote to Galileo in 1613 that the "instrument

you invented I have bettered"(1). Sagredo seems to have hermetically sealed the tube of the thermoscope, although it is not clear that he sealed it so as to leave a vacuum.

In the meantime, a new and interesting personage appears on the stage. Santorio Santorini (1561-1636), better known as Sanctorius, at the age of 21 years took his degree in medicine at Padua; for three years he applied himself to clinical study. After some years abroad, he returned to Padua. His first book, *"Methodi Vitandorum Errarium Omnium, etc.,"* appeared in 1602. He was later appointed to the professorship of theoretical medicine at Padua. His medical fame today rests upon his early experiments on metabolism and upon his studies on what he called "insensible perspiration." His well-known book, *"Ars de Statica Medicina,"* appeared in several editions beginning with 1614. Sanctorius published his *"Commentary on Avicenna"* in 1625, and it was in this book that he described his use of the pulsilogium, thermoscope, and other instruments in clinical medicine. For his application to the study of patients, Sanctorius modified the thermoscope of Galileo rendering it more sensitive. There seems to be no doubt that Sanctorius was the first physician to attempt measurement of the exact heat of the human body as an aid to diagnosis. "We have here," he says, "an instrument with which we may closely measure the degree of the recession of the heat of the external parts, and with which we may daily learn with accuracy how much we vary from the normal; also the degree of heat of your patients". He taught the first lesson of using the mouth to obtain a record of body heat, providing a hood around the bulb for the patient to breathe into. However, he gives no table of temperatures and no records. No real good came of it.(1)

As the centers of learning in northern Italy were visited annually by scholars from all parts of Europe, knowledge of the new instruments rapidly became disseminated, and men with inquiring minds began to experiment with them in several countries. Such a one was the French mathematician, Jean Leurechon (1591-1670), who is said to be the first to apply the word "thermometer" to Galileo's primitive instrument in his book, *"Recreations Mathematique,"* appearing in 1624.

Another early experimenter with the thermometer was a French chemist and physician, Jean Rey (1583-1645). Rey's improvement of the thermometer (about 1632) consisted of filling the glass bulb with water, so that the expansion or contraction of the fluid with temperature changes produced a reading on the scale. Galileo's thermoscope had depended on the expansion and contraction of air above the water. Jean Rey was a man of considerable parts. He was a friend of Descartes and conducted a voluminous correspondence with many scientific contemporaries. His experiments on the heating of tin and lead, demonstrating that there was a definite increase in weight during the oxidation process, preceded the more precise work of Lavoisier by 150 years.(2),(3)

Ferdinand II, Grand Duke of Tuscany (1610-1670), patron of the arts and sciences, and long familiar with the studies of Galileo and Sanctorius, took personal interest in the improvement of the thermometer, bringing into more general use glass instruments hermetically sealed with spirits enclosed(4). A graduated scale was attached to the stem. These thermometers were known as Florentine and were first introduced between 1641 and 1654. The Accademia del Cimento founded by the duke and lasting for only 10 years, took up the problem of selecting two fixed temperatures for the thermometer and of subdividing the interval between into a suitable number of degrees. The cold of winter and the heat of summer were taken as the two fixed points, with the intervening space being divided into 40 or 80 degrees. The melting point of ice was found by them to be invariable and read 13½° on their scale.

These Florentine fixed points proved unsatisfactory and all sorts of improvements were suggested. Robert Boyle (1627-1691), who visited Italy in 1641 and spent some months in Florence, is credited with introducing one of the earlier models of the Florentine thermometer into England(5). Boyle conducted many experiments on temperature, demonstrating the equable temperatures of deep caves, which were published in his *"New Experiments and Observations Touching Cold."* He recognized that the lack of a fixed standard made difficult the comparison of data collected by different individuals in various parts of the world.

The Florentine thermometer reached Paris by way of Poland. The French astronomer, Ismael Boulliau (1605-1694), received one which was 10 centimeters long, containing alcohol, from a friend at the Polish court. Boulliau experimented with making similar instruments on his own and produced one using mercury as the expansible fluid. Recently a temperature record made by Boulliau with his thermometer from May 1658, to September 1660, has been discovered. Next to the Florentine records begun in 1655, these are the earliest temperature records known(2).

During the next few decades many learned men of science in Europe undertook studies with these "curious and useful machines." It became generally recognized that fixed points or standard temperatures were necessary, instead of making each degree a given fraction of the expanding fluid in the bulb, as had previously been done.

The first thermometer with a fixed scale was devised by Honore Fabri (1607-1688), a French Jesuit and scientific scholar, in 1661, using snow for the low point and mid-summer heat for the high point(6).

In 1664, Robert Hooke (1635-1703), English physicist and inventor, proposed the freezing point of water as the low point(6).

Christian Huygens (1629-1695), a Dutch physicist who made the first pendulum-regulated clock, is said to have suggested in 1665 the temperatures of melting ice and of boiling water as the two fixed points in the thermometer scale(2).

Edmund Halley (1656-1742), an English astronomer and mathematician, discovered in 1693 that the temperature of boiling water is constant at sea level(6).

In 1694, Carlo Renaldini (1615-1698), professor of mathematics and philosophy at Pisa, proposed that the intermediate points on the scale be determined by observing the temperatures of known mixtures of ice-cold and of boiling water. By this method, the temperature of 50° would be defined as that obtained by mixing equal weights of ice-cold and of boiling water(4).

Sir Isaac Newton (1642-1727), who "carried everything he meddled with beyond what anybody had done before him, and generally with a greater than ordinary exactness and precision," suggested a scale on which the freezing point of water was taken as zero and the temperature of the human body as 12 degrees. The liquid used by Newton in his thermometer was linseed oil(5).

Other workers soon found Newton's thermometer unsatisfactory. His zero point was set as though he considered freezing water to be the lowest degree of heat. It was discovered, too, that the oil adhered to the sides of the tube and thus gave incorrect readings.

In 1702 and 1703, Guillaume Amontons (1663-1705), a French physicist, published two noteworthy papers on thermometry. His instrument consisted of a U-shaped tube; the shorter arm ended in a bulb and contained air, the longer arm contained mercury. The volume or "spring" of the trapped air varied with the heat to which it was exposed, thus moving the mercury column up or down the tube. Amontons chose the boiling point of water as a fixed point, but as he was unaware that the temperature at which water boils varies with the air pressure, his thermometer was, therefore, not extremely accurate. On his scale the boiling point was marked at 73° and the melting point of ice at 51½°, so that zero on his scale was equivalent to about −240° on the centigrade scale, a remarkably close approximation to the modern value of −273° for the zero of the air thermometer (7), (8).

Ole Roemer (1644-1710), the Danish astronomer who studied in Paris and also in England where he met Newton, Halley, and others interested in thermometry, is also said to have used mercury as the liquid element in his experimental instruments. It is probable that he suggested the use of mercury to Fahrenheit(5), (9). Roemer is remembered especially for his astronomical studies. He measured for the first time the speed of light, making use of observations on the eclipses of the moons of Jupiter.

It is interesting that the best-known name in thermometry is associated with the revival of its application to medicine. Gabriel Daniel Fahrenheit (1686-1736), who was born in Danzig but lived for most of his life in England and Holland, devoted himself to the study of physics

and made his livelihood apparently from the manufacture of meteorological instruments. In Holland, Fahrenheit was on friendly terms with the great Dutch physician, Hermann Boerhaave (1668-1738), who was professor of botany, medicine, and chemistry, as well as rector of the university at Leyden. Fahrenheit became proficient in working glass and probably at Boerhaave's suggestion began practical experiments with thermometers around 1706.

At first, Fahrenheit used alcohol as the fluid medium in his instruments. He took as his zero point a mixture of snow and salt, the greatest cold known in his day, thus apparently hoping to avoid any negative or below zero readings. The high point on his first scale was the temperature of the human body, which was designated as 12°. Later for convenience in having smaller divisions, this number was changed to 96°. Around 1714, Fahrenheit began to use mercury and developed a better method of purifying this element.

The freezing point of water was at that time supposed to be rather variable. Fahrenheit showed, however, that as soon as ice began to form, the temperature always rose to the same point. At a later period he showed, as others had previously suggested, that the temperature at which water boils is always the same at the same barometric pressure. This fact provided a second fixed point on his scale. The freezing and boiling points of water on his scale with human armpit temperature at 96° came out near 32° and 212° respectively.

For some years, Fahrenheit kept secret his methods for manufacturing thermometers, probably for commercial reasons; but between 1724-1726, he published five communications in the Philosophical Transactions of the Royal Society of London reporting on his experiments.

During the next few decades quite a number of other thermometer scales were proposed by investigators. In 1731, that remarkably versatile French scientist, Rene Antoine de Reaumur (1683-1757) found that a mixture of spirits of wine and water in the proportion of 4 to 1 increased from 1,000 volumes to 1,080 volumes when the temperature was raised from the freezing point to the boiling point of water. The Reaumur scale was thus set from zero to 80°, each degree representing an expansion of 1/1,000th of the initial volume of the alcohol. Later on, mercury was substituted for the alcohol mixture used by Reaumur in his investigations (2).

Anders Celsius (1701-1744), an astronomer from Uppsala, in 1742 described the centigrade scale for his thermometers in a paper read before the Swedish Academy of Sciences. He proposed that the zero point be set at the temperature of boiling water and the 100° point be set at the temperature of melting ice. The centigrade scale, as we now know it, was introduced by Dr. Christin of Lyons in 1743, and independently a few years later by a colleague of Celsius, Marten Stromer (1707-1770), of Uppsala, both of whom reversed the scale of Celsius putting the temperature of melting ice as zero.(2)

As may well be imagined, during these first few decades of the 18th century there was much confusion among scientists about thermometers. This was expressed by an extraordinary Scottish physician, George Martine (1702-1741), who writing in 1738(5) says, "What fluid then shall we take for our thermometers? We have found inconveniences in Air, Oil and Spirits; and Water is more exceptionable than any of them. We have nothing left but quicksilver. This is a very moveable and ticklish fluid; it both heats and cools faster than any liquor we know, or have had occasion to try, faster, I am sure, than water, oil or spirit of wine; it never freezes by any degree of cold hitherto observed; and bears a great deal of heat before it arrives at the boiling expansion; and, if well purified, does not stick to the inside of the tube".

The relatively small coefficient of expansion of mercury as compared to the other liquids was an apparent disadvantage, but this could be offset by making the tube in smaller proportions to the bulb. Actually mercury expands about seven times as much as glass for a given rise of temperature.

George Martine in *"An Essay Toward Comparing Different Thermometers with One Another"*(5) experimented with 15 instruments having different scales. He states "we have heard of many other thermometers – – but they have been generally so ill limited and de-

scribed, that they are of no manner of use; and to whatever purpose they might serve their authors, are to us as if they never had been."

Another most interesting contributor to the development of thermometry was the Swiss geologist and physicist, Jean Andre · De Luc (1727-1817). In his two volumes, "*Recherches sur les Modifications de l'Atmosphere*" (Geneva 1772), are recorded and analyzed the results of a long course of rigorous experimentation. De Luc found both the thermometers and the barometers of his day in an unsatisfactory condition owing to the technical defects in the methods of their construction. He improved Reaumur's thermometer by substituting mercury for alcohol. His principal contribution, however, was a better definition of the techniques for determining accurately the fixed points of the scale; i. e., the freezing and boiling points of water(10).

Gradually over the years, Fahrenheit's scale, with its small degrees and its zero below the freezing point, appeared to have advantages especially for meteorological observations and has been retained in most English-speaking countries. For general scientific purposes, however, the centigrade system is almost universally employed. For many years, Reaumur's scale was popular in Germany, especially for household purposes.

(*Continued in October issue*)

REFERENCES

1. Mitchell, S. Weir: The Early History of Instrumental Precision in Medicine. The Transactions of the Congress of American Physicians and Surgeons, 1891, Vol. II, pp. 159-198.

2. Cajori, Florian: A History of Physics in Its Elementary Branches, Including the Evolution of Physical Laboratories, 1906, The MacMillan Company, New York.

3. Nouvelle Biographie Generale, Firmin Didot Freres, Fils et Cie., Paris, 1862.

4. Encyclopedia Britannica, The University of Chicago, 1944, Article on "Heat."

5. Martine, George: Essays Medical and Philosophical, London, A. Millar, 1740.

6. B-D Products Manual, 1929, Becton, Dickinson and Company, Rutherford, New Jersey.

7. Encyclopedia Britannica, The University of Chicago, 1944, Article on "Cold."

8. Dampier, William Cecil: A History of Science, 3rd Edition, 1943, The MacMillan Company, New York.

9. The American Cyclopedia, 1883, Vol. XV, p. 698.

10. Wolf, Abraham: A History of Science, Technology, and Philosophy in the 18th Century, 1939, The MacMillan Company, New York.

11. Korn, Horace M.: Notes on the Medical History of Vienna, Annals of Medical History, 1937, N. S. IX, p. 345-370.

12. Osler, William: Evolution of Modern Medicine, 1921, The Yale University Press.

13. McGuigan, Hugh A.: Medical Thermometry, Annals of Medical History, 1937, N. S. IX, pp. 148-154.

14. Walshe, Francis: The Nature and Dimensions of Nosography in Modern Medicine. The Lancet, 1956, ii, pp. 1059-1063.

15. Mettler, Cecilia C.: History of Medicine, 1947, The Blakiston Company, Philadelphia.

16. Review of Wunderlich's Book: The Course of the Temperature in Disease. American Journal of Medical Sciences, 1869, N. S. 57, pp. 425-447.

17. Garrison, Fielding H.: An Introduction to the History of Medicine, 3rd Edition, 1922, W. B. Saunders Company, Philadelphia.

18. Allbutt, Thomas Clifford: Medical Thermometry, British and Foreign Medical Review, 1870, XLV, p. 429; and 1870, XLVI, p. 144.

19. Wilks, Samuel: Biographical Reminiscences, 1911, London.

20. Currie, James: Medical Reports on the Effects of Water, Cold and Warm, as a Remedy in Fever and Febrile Diseases etc., 1797, Caddell and Davies, Liverpool.

21. Dowler, Benet: Researches on the Natural History of Death, 22 pp., New Orleans, 1850.

22. The National Cyclopedia of American Biography, New York, 1909, Vol. X, pp. 285-286.

23. Flint, Austin Sr.: New York Medical Journal, November, 1866.

24. Glazebrook, Richard: A Dictionary of Applied Physics, Article on Thermometry, 1922, The MacMillan Company, London.

25. Fox, Cornelius B.: Remarks on Clinical Thermometers, Medical Times and Gazette, 1869, II, pp. 459-461.

THE TREATMENT OF MUMPS AND ITS COMPLICATIONS IN THE ADULT MALE

By Albert G. Bower, M.D., Chief Physician

Communicable Disease Hospital, Los Angeles County General Hospital

MUMPS is an acute communicable disease, highly contagious, spread almost entirely by unrecognized, but common, indirect contacts and caused by a specific virus. Classically, it causes swelling in the parotid glands, less frequently, the submaxillary salivary glands, and as complications may involve the central nervous system, breast, pancreas, thyroid, ovary and testis.

The disease is centuries old and the description of cases occurring during an epidemic on the island of Thasos written by Hippocrates is easily recognizable as the entity we call mumps today. Hippocrates described swelling about one or both ears at the angle of the jaws which receded without suppuration and was frequently accompanied by swollen testicles. However, it was not until 1790 that Hamilton gave us the classical description of the disease. This was followed over 100 years later by Comby's book on the subject and Schlottmuller's monograph in 1904. It has always been a dreaded recruit disease in world armies, and the French, particularly, have given some good descriptions of it in the military service.

Pathology: The characteristic sign of mumps consists of edematous swelling of the parotid gland and the surrounding tissues. Pinpoint hemorrhages occur in the capsule and in the parenchyma. Destructive changes occur which include the presence of cytoplasmic inclusion bodies and disintegration af acinar cells. First, there is an infiltration of mononuclear phagocytes into the necrotic areas around the salivary ducts followed later by lymphocytes. The spread appears to be through the lymphatics, or blood stream, possibly both.

In the testicle, the inflammatory process is not uniformly distributed. The convoluted, or seminiferous tubules, may be completely destroyed and distended with exudate in some areas, while adjacent areas may be either normal or very slightly involved. The affected tubules contain large number of mitotic sexual cells with few spermatozoa. In the destroyed tubules the exudate consists almost entirely of neutrophils and fixed-tissue endothelial phagocytes. Punctate hemorrhages and coarse fibrin occur in the intertubular connective tissue and between the affected tubules, and the entire tissue is very edematous. Other tissues merely present variations of these processes, depending upon the extent of the damage done. The epithelium adjacent to the tubules usually contains mitotic sexual cells showing the various stages of spermatogenesis. There are small hemorrhages and zones of cellular exudate containing polymorphonuclear leukocytes and endothelial leukocytes surrounding the blood vessels.

Mumps in its natural state is a disease limited to man. In experimental primates it will not pass from one animal to another in the cages. The virus shows a selectivity for the parotid, submaxillary and submental glands as well as certain portions of the nervous system, and occasionally other organs. The ovary is affected far less frequently than the testicle. Because of a high serum amylase, due to the involvement of the parotid glands from which it stems, the assumption has been unjustifiably made that this denoted pancreatic involvement. It is true, the pancreas is occasionally involved, but not nearly as frequently as the testis in the male. At times, the lacrimal glands, the thymus, and Bartholin's glands have been involved, and not infrequently the thyroid and the breasts in the female. The virus is excreted in the saliva early in the disease. The involvement of the central nervous system as a part of mumps is almost universal. Cells in the spinal fluid, principally lymphocytes, and increased protein are commonly found. This has been interpreted as a sign of encephalitis or encephalomyelitis, the assumption being that the cells are extruded through the pia-arachnoid and the Virchow-Robin spaces just as in polio-

(Presented before the Arizona Medical Assoc., Yuma, 1957).

myelitis. My own interpretation of this, after seeing thousands of cases of mumps and doing spinal punctures on dozens of them, is that this is largely a manifestation of cells extruded from the perivascular round-cell infiltration and of the meninges, and that true encephalitis or encephalomyelitis in mumps is much rarer than in almost any of the commoner diseases of childhood; but as in all other febrile diseases, encephalitis or encephalomyelitis complicating or following mumps occasionally does occur.

Signs and symptoms: After a variable incubation period averaging 18 days, the first symptom is usually fever, followed by swelling of the parotid gland, which has given the disease its name of epidemic parotitis. In severe cases, the swelling causes marked pain, but tenderness to palpation is present from the onset, varying with the degree of swelling present. A particular point of tenderness is at the angle of the jaw when firm pressure is made with the forefinger at the temporo-maxillary joint while the second finger is pressed behind and under the angle of the jaw. Two other points of tenderness upon palpation are the mastoid tip and the inferior portion of the submaxillary gland. The parotid duct may be protuberant and it is usually surrounded by a small aura of red. One parotid is much more frequently involved than both, though both may be involved simultaneously; at other times as the swelling subsides in one, it follows in the other. In very mild cases, particularly in small children, fever may be absent.

Treatment: The treatment of uncomplicated mumps is purely symptomatic as it is a self-limited disease. It is with the complications that we are particularly concerned.

Meningitis with opisthotonos, and the presence of cells in the spinal fluid, unless severe, requires no treatment, but is self-limiting. When severe, lumbar puncture alone to relieve the pressure is usually all that is needed. Meningitis cannot be considered a complication, but is rather a part and parcel of virtually all cases of epidemic parotitis.

When post-infectious encephalitis occurs in mumps, however, we have quite a different picture. Here the sensorium is involved, muttering delirium may occur, diplopia is not infrequent, and signs referable to the brain appear. We shall refer to this later.

Prophylactic treatment: This consists of giving concentrated anti-mumps serum, really gamma globulin, in which 2.5 cc. of the concentrate is equivalent to 25 cc. of the non-concentrated pooled convalescent serum. Under age 12, the dose is 2.5 cc.; in adults, I prefer 10 cc. If exposure is continuous, the dose should be repeated at the end of 10 days. If the serum be used in active treatment, as opposed to prophylactic, particularly in orchitis, my recommendation is that 40 cc. or more be given depending upon the size of the patient and the severity of the lesion.

Also, as a prophylactic measure, may be mentioned the use of mumps vaccine. This is prepared from selected virus grown in chick embryos. A good virulent strain is used, but is not polyvalent as no evidence exists of immunological differences between one strain and another. Persons sensitive to eggs or to chicken on an allergic basis should not receive this vaccine except under constant medical supervision. Otherwise, 1 cc. is given subcutaneously or intramuscularly in two doses a month apart. To maintain immunity, it must be repeated annually. Vaccine immunization will rarely prevent mumps after an individual who is susceptible has been thoroughly exposed. Its principle value lies in situations where larger numbers of susceptible people are going to continue to be continuously exposed during an epidemic. Such epidemics have been stopped by vaccination.

Active treatment: Mumps meningitis requires no treatment. It is part of the disease and, like mumps itself, is self-limited unless some unusual complication occurs.

Mumps encephalitis, or encephalomyelitis, fortunately is a relatively rare complication of mumps, particularly when compared to the same type of complicating factor in measles or chickenpox. If left alone, the majority of cases recover with no attempt at specific therapy. In severe cases cortisone or ACTH may be tried cautiously over a period of several days, realizing that in virus diseases, while the signs of inflammation are allayed by these drugs, actually the quantity of virus may be increased and spread without giving evidence of that fact while the

ketosteroids are being used.

In those cases in which the encephalomyelitis component persists, treatment with typhoid vaccine may be specific in restoring the patient to a normal, useful life. This should never be done outside of a hospital, and it requires special training upon the part of the physician administering the treatment as well as by the nurses on the particular case. The danger of this treatment, which utilizes typhoid vaccine given in large doses, either intravenously or intramuscularly, has long since been obviated by the methods worked out during our 37-year clinical research on this particular entity. The typhoid vaccine treatment is not shock therapy, nor is it fever therapy, for we have not been able to duplicate its results by using the hyperthermia cabinet, nor by non-specific protein injection therapy. I shall not go into this particular matter at this time, but for those who are interested, reference is hereby made to work by Dr. E. G. Knouf and myself on measles encephalitis, and reported in California Medicine in July, 1954. This same method applies to other post-infectious types.

The principal complication in the adult male, and the one which in the past has been most difficult to handle, is mumps orchitis. While this disease rarely occurs before the age of puberty, I observed one nine year-old youngster in whom the left testis was involved three days before any sign of swelling of the jaw. Steiner reports a case of orchitis in a nine month-old infant which occurred during an epidemic, the child contracting it from the parents. The father likewise, had orchitis. There are other cases on record of youngsters before the age of puberty, but generally speaking, this is unusual. It is interesting to note that there also are cases on record of orchitis occurring in undescended testicles, particularly those incarcerated in the inguinal canals. While the incidence of orchitis in mumps varies greatly, in my experience it has been far higher during the course of mumps in those males who are permitted to engage in any activity whatever, after they have reached the age of puberty.

A careful study of epidemics reported in schools and in military establishments, when critically analyzed, furnishes a reason for the great variance in the incidence of complicating orchitis per 1,000 cases of mumps reported: this has varied from 5 per cent to 100 per cent. Critical analysis in every instance tends to support the view that the highest incidence of orchitis consistently occurred in those groups in which physical activity was the greatest during the acute stage of their mumps. At present, most doctors allow mumps patients who are past puberty to be out of bed for visits to the toilet, or to sit in chairs in the bedroom to rest themselves from the monotony of bed care. From observation of many cases of mumps in private practice; in 34 years of experience in the Communicable Disease Unit of the Los Angeles County General Hospital; and as surgeon to a 500-bed military mumps hospital in which the patients were poorly housed in Sibley tents, from which they had to journey forth during inclement weather to outdoor latrines to answer the call of nature; I am convinced that the dictum: "It makes no difference whether or not a patient with acute mumps be permitted up or kept in bed," is a very bad teaching and not founded on fact. Based upon prolonged observation, in my opinion every male patient past the age of puberty with mumps should be given a well-fitted scrotal support at once, and should be kept in bed and not allowed up for any purpose until at least four days after all swelling has disappeared. When this regimen was placed in force in the 500-bed military mumps hospital previously mentioned, the orchitis incidence (which had been virtually 100 per cent, all patients being affected) decreased to about one in five. I have no accurate figure because things moved too fast in wartime, and that was nearly 40 years ago, in subzero weather.

The treatment of the adult male with mumps has been indicated in the foregoing paragraphs. Put the patient to bed, insist upon the use of a bedpan and urinal, support the scrotum with a well-fitting suspensory, and treat the patient symptomatically. As far as orchitis is concerned, such therapy comes under the heading of prophylactic treatment. The scrotum should receive support from the first moment with a well-fitting suspensory to take the tension off the spermatic cords. As already mentioned, the patient should not be allowed to go to the bathroom until such times as all swelling has completely subsided, and he should be kept in bed until all swelling of the jaw has disappeared at

least four days.

For a while, female hormones, particularly stilbesterol, had quite a vogue in orchitis therapy. I was never convinced that it accomplished anything.

Mild cases of orchitis take care of themselves unless pressure necrosis takes place, but sometimes it is hard to know whether or not a mild testicular swelling will subside, or else continue to swell until hydraulic pressure will cause complete atrophy. With fully-developed, severe orchitis, surgical interference became common treatment during World War II. Physicians were guided largely by the patient's fever, testicular tenderness upon the slightest touch, the incompressibility of the soft substance of the testis, the amount of swelling, and particularly by pain. Under aseptic precautions, the edematous scrotum was incised and the knife carried down through the tunica vaginalis allowing the hydrocele fluid to drain. The incision used is about 3 cm. long, and under firm pressure the tunica albuginea is incised so as to release tension inside the testis. Though usually advised, we have not used a cruciate incision. Allow fluid to escape and relieve pressure are the guiding principles.

Four years ago, fully realizing the danger of using ketosteroid preparations in acute virus infections, we felt that cortisone might be of some assistance in treating mumps orchitis because of its great anti-inflammatory effect. For some time, we played with the dosage, attempting to establish an optimum schedule. Today, after wider experience with many cortisone-treated cases, depending upon the size and weight of the patient, we give an initial oral dose of 300 to 400 mgm. of cortisone at once. This large loading dose is very important: smaller doses accomplished nothing. With increasing experience, following the initial 300 to 400 mgm., we have learned to give 100 mgm. of oral cortisone every 6 to 8 hours until all swelling, pain and fever have subsided. Here again, the size of the patient and urgency of the case will be the guide as to the frequency and quantity of the drug given, rather too much than too little.

Since the above regimen has become established, dread with which we formerly approached these cases has disappeared entirely. Euphoria is usually established in 8 to 12 hours and the objective quantitative improvement becomes complete in 24 to 76 hours. We no longer call in the consulting urologist to incise the testis in these cases; surgery is no longer necessary. In this connection, however, I should not hesitate for one second to incise a neglected late case of orchitis if the same were indicated in the attempt to save surviving tissue from death by hydraulic pressure. We feel that cortisone therapy is a great step forward in the treatment of this dread complication and we are very happy to find that our experience is being widely duplicated in other large communicable disease centers throughout the nation.

REFERENCES

Bower, A. G.: Mumps orchitis treated with cortisone. J.A.M.A. 162:425 (September 22) 1956.

Candel, S.: Epididymitis in mumps, including orchitis: further clinical studies and comments. Ann. Int. Med. 34:20 (January) 1951.

Comby, J.: Les Oreillons. Paris, 1893.

Enders, J. F.: Techniques of laboratory diagnosis, tests for susceptibility and experiments of specific prophylactics. J. Pediat. 29:129 (August) 1946.

Gellis, S. S., McGuinness, A. C. and Peters, M.: Study on prevention of mumps orchitis by gamma globulin. Am. J. M. Sc. 210:661 (November) 1945.

Hamilton, R.: An account of a distemper, by the common people in England, vulgarly called the mumps. Trans, Royal Soc. of Edinburgh. 2:59, 1790. Reprinted in the London Med. Jour. 12:190, 1790.

Hippocrates. His genuine works, translated by Adams, F.: Book 1: Of the epidemics. Sec. 1, Vol. 1, 352, London, 1849.

Hoyne, A. L., Diamond, J. H. and Christian, J. R.: Diethylstilbesterol in mumps orchitis: prophylactic and therapeutic use. J.A.M.A. 140:662 (June 25) 1949.

Johnson, C. D. and Goodpasture, E. W.: An investigation of the etiology of mumps. J. Exper. Med. 59:1, 1934.

Kane, L. W. and Enders, J. F.: Immunity in mumps. The complement-fixation as an aid in diagnosis in mumps meningoencephalitis. J. Exper. Med. 81:137, 1945.

Kinsell, L. W. and Jahn, J. P.: Combined hormonal-antibiotic therapy in patients with fulminating infections. A.M.A. Arch. Int. Med. 96:418 (September) 1955.

Knouf, E. G. and Bower, A. G.: Measles encephalitis. A successful method of treatment with typhoid vaccine. California Medicine 81:18-22 (July) 1954.

LaBoccetta, A. C. and Sawchuk, C.: Mumps orchitis. J.A.M.A. 162:12 (November 17) 1956.

Miller, J. M., et al.: Treatment of mumps and complicating epididymo-orchitis by tetracycline hydrochloride and streptokinase. Mil. Med. 118:31 (January) 1956.

Nickerson, G. H. and Worden, E. M.: Chloromycetin in treatment of mumps. Canad. M.A.J. 66:17 (January) 1952.

Risman, G. C.: Effect of cortisone in orchitis of epidemic parotitis (mumps). J.A.M.A. 162:875 (October 27) 1956.

Rozran, D. M.: Mumps meningoencephalitis. Report of an unusual case. California Medicine 80:468 (June) 1954.

Schottmuller, H.: Parotitis epidemica, in Nothnagel's Specielle Pathologie und Therapie 2:3.

Solem, J. H.: Effective corticotropin in orchitis of mumps: preliminary report. Acta med. scandinav. 149 (P.T.V.) 341, 1954.

Stenberg, E. S. and Berry, W. C.: The use of cortisone in the treatment of mumps orchitis. U. S. Armed Forces M. J. 7:1414 (October) 1956.

Sutliff, W. D. and Barnes, Z. B.: Aureomycin, chloramphenicol and oxytetracycline ("Terramycin") in mumps. A.M.A. Arch. Int. Med. 91:68 (January) 1953.

Werner, C. A.: Mumps orchitis and testicular atrophy: I. Occurrence. Ann. Int. Med. 32:1066 (June) 1950; Mumps orchitis and testicular atrophy: Factor in male sterility., Ibid. 32:1075 (June) 1950.

DIAGNOSIS AND MANAGEMENT OF COMMON GYNECOLOGICAL PROBLEMS

By Walter J. Reich, M.D., Mitchell J. Nechtow, M.D., and Jerome B. Reich, M.D.

Chicago, Illinois

TRICHOMONAS VAGINITIS

AMONG the most common causes for vaginal discharge often associated with vaginitis are those due to either trichomonas or monilia (yeast). Clinically, trichomonas vaginitis is characterized by a yellowish, bubbly malodorous discharge, often associated with itching. The vaginal wall may be injected, only slightly, or even up to an angry red, and tender and painful. Indeed, trichomonas vaginitis may produce acute, painful distressing symptoms. The causative organism is the parasite, trichomonas vaginalis, and is easily identified microscopically, in a hanging drop made from a slight amount of discharge mixed with a drop of warm normal saline or water. The parasite with its characteristic flagellum or tail can be seen swimming about, as a rule.

In combating this condition, both the prophylactic treatment and reinfection sources must be considered, as well as the active treatment. Bedpan splash, contamination from the stools, poor hygiene in general, as well as reinfection from the male's prepuce, urethra, or prostate, or from her own Skene's ducts, urethra or rectum. The active treatment starts by cleansing the vagina with a liquid made up of one tablespoon of a 20 per cent sodium caprylate solution to one quart of water. The same mixture is used as a douche nightly, followed by vaginal insertion of a suppository of milibis (15 per cent arsenic and 42 per cent bismuth). Twice weekly, milibis powder is insufflated in the office, via an open speculum. Treatment is carried out throughout the month, including the menstrual period.

YEAST (MONILIA) VAGINITIS

Yeast vaginitis is caused by the monilia organism, and is characterized by patchy grey-white flecks that cover a slightly injected or sometimes bleeding underlying mucosa. Itching and discharge are usually present.

It has often been said that trichomonas vaginitis resembles the strawberry tongue of scarlet fever, and yeast vaginitis the throat of diptheria.

Using 10 per cent sodium (or potassium) hydroxide as the hanging drop solution, the characteristic yeast structure with its branches and buds is easily noted.

The caprylate treatment of yeast vaginitis has been very successful. At the initial visit the vagina is cleansed with a solution made up of one tablespoon of 20 per cent caprylate solution to one quart of water. At home the patient douches nightly with a similar solution, followed by intravaginal insertion of caprylate ointment. Twice weekly caprylate powder is insufflated, in the office.

ELECTROCAUTERIZATION OF THE CERVIX

The electrocautery is paramount for the treatment of chronic endocervicitis, with or without erosion. Clinically this condition is characterized by a white mucoid discharge, annoying as a rule only because of its presence. Before simple cervicitis and erosion are diagnosed, the patient's history is carefully evaluated, and a cytological cervico-vaginal (Papanicoloau) smear, and/or biopsy is taken in order to rule out possible carcinoma of the cervix. The following general principles, only if adhered to, establish the justifiable term "simply cautery":

1. Cauterize the patient about one week post-menstrually. This is the optimum time because the immediate post or pre-menstrual vascularity may lead to possible hemorrhage. We have seen this complication several times, and one patient required as many as three blood transfusions.

2. The color of the electrocautery tip is maintained at a dull cherry red as observed in ordinary room light, not under the spot light. Too hot a tip causes deeper burns, more slough,

From the Department of Gynecology, Cook County Hospital, Grant Hospital, Cook County Graduate School of Medicine, Chicago Medical School, Chicago, Ill.

greater chance for bleeding.

3. To minimize possible vaginal burns, the "cold cautery" is used. The tip is dipped into cold water before being applied to the cervix.

4. Every cauterization consists of a canal cautery, regardless of whether an erosion, eversion or ectropion are also present or not. The canal cautery is done first, cauterizing the entire length of the canal up to the internal os. Next, the red, eroded area is touched up by the electrocautery tip.

Douching and intercourse are forbidden for two weeks in order not to interfere with the slough and cause possible bleeding. During this time there is usually an increased discharge, often foul-smelling; the patient is told about this in advance. Douching with a mild acid solution is allowed after the second week.

5. The cervical canal is kept open by weekly dilatation. This is important, and prevents scarring and stenosis with its possible complication of leucometra, or pyometra, or hematometra. A simple cotton applicator dipped in 10 per cent silver nitrate or negatan solution often suffices.

It takes about six to eight weeks for complete epithelialization. Never recauterize before three months. A cervix that continues to bleed after cauterization may also have had (a) too deep and too hot a cautery. (b) cervix was acutely infected. (c) recauterized too soon after recent cautery, and (d) possible associated carcinoma of the cervix, previously undetected.

VAGINOSCOPY

The vaginoscope has been brought to light recently because of its practical value in detecting and assisting in the removal of foreign bodies of the vagina. Especially has this been of use in cases of unexplained vaginal discharge in the young female child. When an x-ray does not clearly reveal whether the foreign body is in the bladder or vagina, vaginoscopy may be the answer, and also the retrieving instrument. An otoscope with a properly shaped speculum piece is very adaptable for this work.

CYTOLOGICAL SMEAR FOR CARCINOMA OF THE UTERUS

One of the most recent advances in detection of early carcinoma of the uterus – particularly of the cervix – can be attributed to the cytological (Papanicoloau) smear method. A cervix with an erosion or even a cervix that looks normal, cannot be definitely labeled as one that does not seat a squamous cell carcinoma. There are too many instances where an innocent looking cervix or a mild erosion was already the site of an early squamous carcinoma. Whether a smear or a biopsy is taken matters not. It is important that some form of screening be used. The cytological smear can be easily performed in the office and because of its non-surgical and painless approach, may perhaps be the one of choice for screening. Materials needed are: (a) fixative which is usually in a bottle, consisting of equal parts of 95 per cent alcohol, (ethyl or isopropyl), and ether. (b) means of obtaining the smear, such a wooden spatula, cotton swab, or anything that might be available or practical for the purpose, and (c) slides. Preferably, the patient does not douche. We attempt to obtain material from (1) the squamocolumnar or erosio-normal junction, long known to be the starting site of early squamous carcinoma: and (2) from the external os; and (3) from the posterior fornix. The material is spread on two slides, being careful not to smear them too thickly or to overlay the smear, and then immediately put into the fixative. The latter is a very important point, in order to prevent the cells from drying. Frosted-end slides are practical, the name is writen on the slide in ordinary lead pencil. The slides are prevented from rubbing with each other by putting an ordinary paper clip on one end.

The slides are then removed after being in the fixative for a minimum of 30 minutes, allowed to dry, wrapped in kleenex and then either delivered or mailed to any experienced cytologist. It might be mentioned that a vaginal speculum is always employed to expose the cervix unless mechanically impossible. Staining is done by using the tri-chrome stain of Papanicoloau. Reports are listed as negative, benign, atypical suspicious, malignant, or definitely malignant. The final corroboration must always lie with the histological section. A positive smear must be followed by a biopsy. It may be necessary to do a ring biopsy and get serial sections in order to detect the very early, often preinvasive carcinoma. A positive smear done by an

experienced cytologist must not go unheeded. Search by biopsy and serial sections must follow.

The very early, preclinical squamous cell carcinoma, often carcinoma in situ, is the one most important to detect. For it is this carcinoma that lends itself to, perhaps, even a cure. Every doctor's office should be a cancer detection center and when the rather commonly occurring carcinoma of the cervix, so important because of its devastating pathogenic nature, can possibly be detected by a routine screening, it may be reiterated – "Routine smears might be the answer."

A MOST IMPORTANT CONSIDERATION IN ALL CASES OF VAGINAL BLEEDING

As the underlying cause for unexplained vaginal bleeding, one must keep in mind that the disturbance may be in the blood and blood forming apparatus. Thrombocytopenic purpura has been brought to attention in just such instances. The young adolescent girl with irregular, often menorrhagic perods, is usually looked upon as having a "functional" or "glandular" problem. Yet, the underlying cause may be that of a marked thrombocytopenia, with its low or even absent platelets, large spleen, prolonged bleeding time, etc. Indeed, such cases have occurred, gone undiagnosed, and unfortunately, expired. On the other hand, gratifyingly, if the diagnosis is made in time, splenectomy may be life saving. It may be well advised that in any meno-metrorrhagic patient, a routine platelet count and bleeding time be done, irrespective of the pelvic pathology.

MANAGEMENT OF SPASTIC, TENSE, RIGID HYMEN

In some cases the underlying cause for sexual incompatibility, especially in the newly married couple, may be due to small rigid hymen with an associated tense, spastic, perineal body. The treatment is not only excision of the hymen, but also an incision downward into the perineal body, through the base of the superficial perineal compartment and the base of the triangular ligament. With a finger in the rectum as a guide, an incision is made down to the external sphincter. It is almost a perineal repair in reverse, in that the cut edges are sutured anterior-posteriorly, thus enlarging the vaginal introitus opening. Healing is usually by primary intention and has been very satisfactory in numerous cases. This is followed by weekly dilatations with a vaginal speculum starting two weeks post-operatively, and continued for about two months.

BILATERAL TRAUMATIC PSEUDOCYSTIC PULMONARY HEMATOMAS

Dermont W. Melick, M.D.,
Kent H. Thayer, M.D., and Doris M. Rowe, M.D.
Phoenix, Arizona

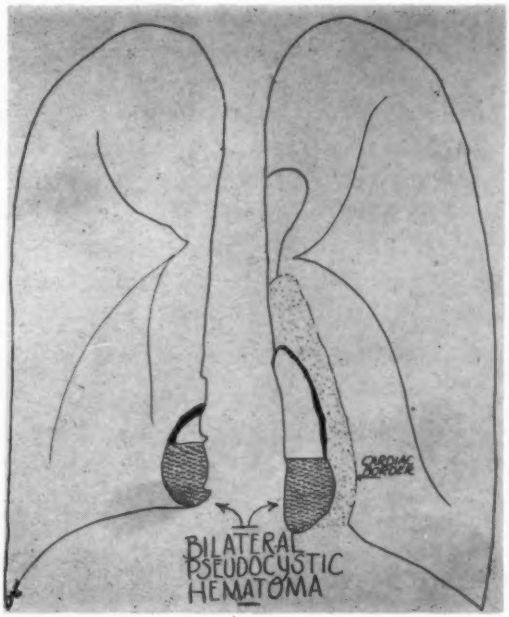
Introduction

A 47-year-old man suffered chest trauma resulting in bilateral posterior basilar pulmonary shadows. These abnormal shadows were caused by liquified hematomas. The mechanism to explain these bilateral lesions is a matter of conjecture.

Case Report

This man was working on a telephone pole 12 feet above the ground. He slipped and fell from the pole striking the ground on the flat of his back. For a few minutes he could not talk and found it hard to breathe. One hour later, he began coughing and raising blood. This hemoptysis continued for several days, but not in any great amount. He complained of tenderness under the costal margins and under the xiphoid. Chest and upper abdominal discomfort were particularly noted when turning over in bed. All of these symptoms subsided gradually. He was unaware of any difficulty in swallowing. He did not have any fever. His past history revealed occasional bouts of asthma. A chest x-ray taken in 1951 had revealed minimal emphysema, but there was no evidence of any pulmonary parenchymal lesions.

Physical examination revealed percussion tenderness over the 10th thoracic vertebra. The aeration of the left lung was satisfactory. At the base of the right lung there was definite suppression of breath sounds and an occasional expiratory wheeze could be heard. There was tenderness over the xiphoid and along both costal margins.



Chest x-rays revealed bilateral cyst-like shadows close to the spine in the posterior mediastinum. These were partially filled with fluid. Diagnostic studies included an esophogram and a gastro-intestinal x-ray series, planigraphic study of the posterior mediastinum, bronchoscopy and lipiodol bronchogram. These studies were helpful to the extent that the planigrams revealed these cystic shadows to have their origin in either lung with no evidence of communication between the two cystic shadows. The radiologist who studied these x-rays suggested the following differential diagnoses: (a) enteric cyst of the mediastinum, (b) bronchial cyst, (c)

mediastinal abscess, (d) loculated mediastinal hematoma, (e) emphysematous cyst wtih intracystic hemorrhage and (f) hiatus hernia.

An exploratory thoracotomy was carried out for diagnosis and the cyst-like lesion on the left was removed. It was located within the medial basilar posterior section of the left lower lobe. The lobe could be freed from the mediastinum without difficulty. The cyst-like area was opened and found to contain a thick brownish fluid. This area of the lung was resected and sent to the laboratory for examination. The pathological report was as follows: "The cyst wall is made up of collagenous, fibrous connective tissue with some fibroblasts. There are also some areas in which there are macrophages containing brown pigment which is probably hemosiderin. The lung tissue which is attached shows some congested and pigmented intra-alveolar macrophages."

The patient's post-operative course was uneventful and his x-ray just before discharge was reported as follows: "The cyst on the left is no longer visible. The cyst on the right has decreased approximately 50 per cent in size." Subsequent films revealed that the cystic area on the right completely disappeared in six weeks.

Discussion

In order to explain these bilateral pulmonary shadows in this particular location, it is necessary to postulate some mechanism whereby such localized trauma might have been accomplished. At the time of the fall, the heart was thrown forcibly backward and acted very much like a pendulum. This resulted in a "black-jack" type of injury to both lungs. Considering this supposition to be true, the heart then crushed the lungs against the spine. This caused a hemorrhage in the posterior medial base of each lung with resulting hematoma. This was followed by central liquefaction of the hematoma and the formation of pseudo cysts.

The President's Page

DO YOU WANT POST GRADUATE SEMINARS? IF SO, DO YOU WANT THEM GIVEN BY DOCTORS IN THE STATE? OR WOULD YOU RATHER HAVE THEM GIVEN BY PROFESSORS FROM A MEDICAL SCHOOL, SUCH AS UTAH OR COLORADO? SPEAK UP!

THESE SEMINARS WERE HELD AT VARIOUS POINTS IN THE STATE FOR SEVERAL YEARS. THEY WERE VERY POPULAR WITH THOSE WHO ATTENDED. UNFORTUNATELY THE ATTENDANCE NEVER JUSTIFIED THE COST TO YOUR ASSOCIATION. THESE WERE DROPPED BECAUSE THEY WERE TOO MUCH OF A FINANCIAL DRAIN ON THE TREASURY.

WILL YOU ATTEND IF THESE ARE RE-INSTATED? WILL YOU HELP DEFRAY THE COST AT $5 OR $10 PER SEMINAR? WE WOULD LIKE YOUR COMMENTS AND LETTERS REGARDING THIS MATTER. IF ENOUGH INTEREST IS MANIFESTED THE SEMINARS WILL BE STARTED AGAIN.

DO YOU KNOW THAT A SPEAKERS' BUREAU IS MAINTAINED BY YOUR STATE ASSOCIATION? IT IS AVAILABLE TO YOUR COUNTY SOCIETIES ON PRACTICALLY ANY SUBJECT YOU MAY DESIRE. IT IS ALSO ANXIOUS TO TALK BEFORE SUCH INTERESTED GROUPS AS PTA, LUNCHEON CLUBS, ETC. YOU HAVE BUT TO REQUEST – BY SUBJECT AND/OR BY SPEAKER. WE WILL DO OUR BEST TO HAVE A SPEAKER AT YOUR MEETING.

C. C. CRAIG, M.D., PRESIDENT
ARIZONA MEDICAL ASSOCIATION

V stands for—greater antibiotic ab

blood levels • faster broad-spectrum ac

ACHRO

is a new and superior form of CI

widely prescribed broad-spectrum ant

in the treatment of more tha 5C

ACHROMYCIN V Capsules are ap

practically twice the absorptio in

oral broad-spectrum h

ACHROMYCIN V is now available in—**CAPSULES.** (Pink) 250 mg., 100 mg. (tetracycline HCl equivalents, phosphate-buffered.) **SYRUP.** Each teaspoonful (5 cc.) of orange-flavored syrup contains 125 mg. of tetracycline HCl activity, phosphate-buffered. **LIQUID PEDIATRIC DROPS.** Each cc. (20 drops) contains 100 mg. of tetracycline HCl activity, phosphate-buffered. (Approx. 5 mg. per drop). Orange Flavor. Plastic dropper-type bottle of 10 cc.

ACHR

REM

*Reg. U.S. P
LEDERLE

tiabsorption · earlier therapeutic

ruraction

OMYCIN* V

Tetracycline Buffered with Phosphate

ofACHROMYCIN* Tetracycline—the

umantibiotic, noted for its effectiveness

ia50 different infections. New

.rerapid-acting, offer an average of

iointhalf the time—unsurpassed

herapy.

ents, **ACHROMYCIN V** dosage: 6-7 mg. per lb. of body weight per day for children and adults.

cline

g. of

REMEMBER THE V WHEN SPECIFYING ACHROMYCIN V

0 cc.

*Reg. U.S. Pat. Off.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

Editorial Page

ARIZONA MEDICINE

Journal of
ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 14 SEPTEMBER, 1957 NO. 9

Darwin W. Neubauer, M.D. ..... Editor, Tucson
Louis G. Jekel, M.D. ..... Assistant Editor, Phoenix

EDITORIAL BOARD

R. Lee Foster, M.D. ..... Phoenix
Frank J. Milloy, M.D. ..... Phoenix
William H. Oatway, Jr. M.D. ..... Tucson
Clarence L. Robbins, M.D. ..... Tucson
Leslie B. Smith, M.D. ..... Phoenix
Elmer E. Yoeman, M.D. ..... Tucson

ASSOCIATE EDITORS

C. Thomas Read, M.D. ..... Chest Surgery
Charles W. Elkins, M.D. ..... Neurosurgery
Paul L. Singer, M.D. ..... Genito-Urinary
Roger F. White, M.D. ..... Pediatrics
Gerd Schloss, M.D. ..... Pathology
Robert Lacock, M.D. ..... Ob-Gyn.
Donald N. McLeod, M.D. ..... Gen. Practice
Alvin L. Swenson, M.D. ..... Orthopedics
William B. McGrath, M.D. ..... Neuropsychiatry
Michael Carreras, M.D. ..... Med. Soc. U.S. & Mexico

REPORTERS

Wallace A. Reed, M.D. ..... Central Distrcit
Jesse D. Humer, M.D. .. American Medical Assoc. and Legislation
Walter T. Hileman, M.D.,. . House of Delegates and Council Action
W. R. Manning, M.D. ..... Annual Meetings
L. D. Sprague, M.D. ..... Medical Economics
Norman A. Ross, M.D. ..... Organizations "Civics"
Mrs. Robert Cummings ..... Women's Auxiliary
Howell S. Randolph, M.D. ..... Historical
Nelson C. Bledsoe, M. D. ..... Historical

COMMITTEE ON PUBLISHING

Darwin W. Neubauer, M.D., Chairman ..... Tucson
R. Lee Foster, M.D. ..... Phoenix
Frederick W. Knight, M.D. ..... Safford
Donald E. Nelson, M.D. ..... Safford
Robert Carpenter Executive Secretary, Arizona Medical Assn, Inc.

ADVERTISING AND SUBSCRIPTION OFFICES
J. N. McMEEKIN, Publisher and Business Manager,
Mayer-Heard Building, Phoenix, Arizona
Eastern Representative
A. J. JACKSON, President
State Journal Advertising Bureau
510 N. Dearborn St., Chicago 10, Illinois

CONTRIBUTORS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notifed within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

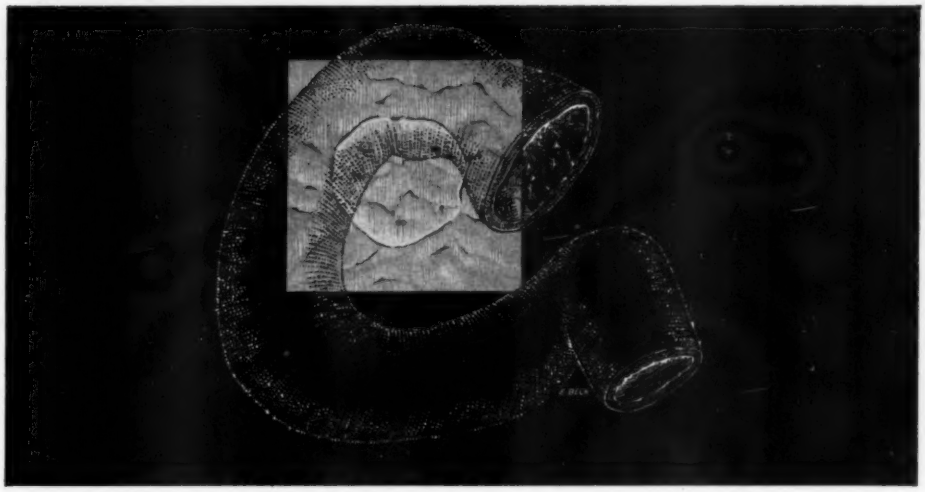
(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

INTERNISTS — ARISE

IT might as well be faced! — that brave little group who a few years ago banded together as the Arizona Society of Internal Medicine is really just a bunch of chauvinists. The traces of attrition are everywhere manifest. No sooner did the thinking moiety of the medical profession in Arizona arrange a trivial token raise in the fee payable for in-hospital medical care than the surgeons, sometimes irreverently referred to as the chopping bloc, began clamoring for a bigger cut. Then from the fringes came the menacing procession of the gas mask gang, the shadow boxers and that unctuous order which dwells in the tules and fattens in its feral trade. These elements already rich beyond the ultimate fantasy of the little internists cry for more and yet more bites of the mites.

The recent rumor of a deal negotiated between a labor union and a medical clinic in Arizona is to the point. For the sake of anonymity the dealers will be known as the Contour Sheet Material Workers Union and The Phoescon Clinic. The union seeks the bestest and mostest for the leastest — natch! The clinic wants a "grabholt" on all this promising new business — natch! So the clinic meets the demand for thorough history and physical examination *at the internist level* plus a standard x-ray film of the chest plus complete blood count and urinalysis plus a serum test for syphilis — all for the sum of $20.00 per package. Now let's sort out the contents of this package and price it in terms of relative value units. The radiologists list a standard chest film as 2 units. The pathologists list a blood count as 1 unit, a urinalysis as 0.4 unit, a serological test for syphilis as 0.5 unit. Remember these are basic units, applicable to Medicare patients for instance. All right, let's add up the items we have so far priced *in units* and the sum is 3.9 units. Cheap enough! Now let's convert units to dollars; the conversion factor for both radiologists and pathologists in Arizona is 5, i.e., one unit is worth five dollars. So it works out for anyone who can multiply that the Contour Sheet Material Worker gets his x-ray and lab. work for $19.50 and the Phoescon Clinic

RELIEVES THE GNAWING ACHE



Pro-Banthīne® provides rapid control of pain in peptic ulcer

In a two-year study[1] by Lichstein and coworkers, documented by intensive personal observation and by follow-up studies, Pro-Banthīne (brand of propantheline bromide) often brought immediate relief of ulcer pain. Patients (11 per cent) who did not respond satisfactorily to Pro-Banthīne therapy had "anxiety manifestations of psychoneurotic proportions."

In addition to frequent immediate symptomatic relief, Pro-Banthīne reduces gastrointestinal motility and diminishes the secretion and acidity of gastric juice, all-important factors in the generation and aggravation of peptic ulcer.

These actions of Pro-Banthīne and its demonstrated effectiveness in accelerating ulcer healing[2-5] mark the drug as a most valuable adjunct in the treatment of peptic ulcer.

The suggested initial dosage is one 15-mg. tablet with meals and two tablets at bedtime. An increased dosage may be necessary for severe manifestations and then two or more tablets four times a day may be prescribed.

G. D. Searle & Co., Chicago 80, Illinois.
Research in the Service of Medicine.

1. Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: Am. J. M. Sc. *232*:156 (Aug.) 1956.
2. Sun, D. C. H., and Shay, H.: Arch. Int. Med. *97*:442 (April) 1956.
3. Rafsky, H. A.; Fein, H. D.; Breslaw, L., and Rafsky, J. C.: Gastroenterology *27*:21 (July) 1954.
4. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology *25*:416 (Nov.) 1953.
5. Silver, H. M.; Pucci, H., and Almy, T. P.: New England J. Med. *252*:520 (March 31) 1955.

SEARLE

has fifty cents left from the double sawbuck the union paid. Now the problem is one of ethics; shall the Clinic pay the internist that whole fifty cents for his hour of history and physical examination (and anyone who thinks a proper history and physical examination *at the internist level* can be done in much less than an hour is a — is a — well is *not an internist*) or shall Phoescon Clinic hand the fifty cents over to administration as part-payment of advertising costs and then the internist could save face by working gratis. Just think of the savings in income tax!

The Illinois Medical Journal in its April 1957 issue appeals to the American Medical Association to request all insurance companies writing medical-surgical coverage to provide medical payment for concomitant medical care. Ha! Once upon a time in the memory of this editor hand holding during induction of anaesthesia was an honorable source of income. Spitting in the wound was usually forbidden but kibitzing was allowed — of course at a specified distance from the hallowed zone. Nowadays it is assumed that all internists wear woolen pants and nylon drawers and are ipso facto "high explosive". Yellow lines are drawn on the floors of operating rooms. In order to cross the red line the internist is required to repair to the dressing room, strip to the skin and don the habiliments; reasonable enough where safety is at stake. But one major hospital in Pima County has really fixed things for the internist: keys to the dressing room are issued only to surgeons, generalists, anaesthesiologists, roentgenologists and pathologists.

This flagrantly un-American discrimination is defended by the key-holders with specious arguments about sanitation but their perfidy is transparent. The war is on! C.L.R.

INTERNISTS, — Schminternists — arise!

Office Space For Rent

31 West Camelback Rd.

Phone CR 7-3337

VA USING NEW REHABILITATING TREATMENT

A TREATMENT devised to rehabilitate severly disabled older patients is producing promising results, Veterans Administration reports. Patients were victims of strokes, hardening of the arteries, arthritis or multiple sclerosis. After receiving maximum benefits from medical and surgical treatments, they were placed in special rehabilitation wards where an individual program was planned for each, under direction of a psychiatrist. Among other treatments, physical and corrective therapists used exercise to restore the patients' strength and coordination. At one hospital 50 of the 60 aged patients progressed enough to be discharged; at another 25 of the 130 left the hospital for jobs, 40 others were discharged, and 55 showed worthwhile permanent improvement.

EISENHOWER SIGNS REVISED DOCTOR DRAFT BILL

THE revised doctor draft bill has become Public Law 85-62; it was signed by President Eisenhower June 27, four days before the expiration of the old doctor draft law. Under the latter, some 10,000 physicians were called up for two or more years of service, starting back at the time of the Korean war. The new law provides for the selective call-up of physicians and dentists to age 35 if they were deferred from the regular draft at any time after June 1951, in order to complete their professional training. The law is effective for two years, expiring at the same time as the regular draft. Defense department estimates that the 2,200 physicians required by the services this fiscal year will come from volunteers.

RADIUM and RADIUM D+E

(Including Radium Applicators)

FOR ALL MEDICAL PURPOSES

Est. 1919

Quincy X-Ray and Radium Laboratories

(Owned and Directed by a Physician-Radiologist)

Harold Swanberg, B. S., M. D., Director

W. C. U. Bldg. Quincy, Illinois

DOCTOR

we need your opinion

For the purpose of continuous improvement of your STATE MEDICAL JOURNAL — *in reading content — original articles, editorials, news, economics and other subjects pertaining to statewide and national affairs, it is urgently requested that you spare a few moments to fill in and return this questionnaire.*

YOUR RESPONSE TO QUESTIONS BELOW WILL BE MOST HELPFUL

	MORE	LESS
Indicate your choice on scientific papers	_____	_____
Editorials	_____	_____
Special Articles (socio-economic and professional business problems, etc.)	_____	_____
News items and personals	_____	_____
Book Reviews	_____	_____

Features to be added or increased _____

_____

Features to be deleted or decreased _____

_____

Indicate your favorite department or feature _____

_____

Do you read your STATE MEDICAL JOURNAL?

Every month _____ Frequently _____ Occasionally _____

Do you read advertisements? Regularly _____ Occasionally _____

Please indicate one product advertised of particular interest to you in last two issues

_____

Name medical journals you read in order of interest: Indicate position you would give your State Medical Journal:

1. _____ 4. _____

2. _____ 5. _____

3. _____ 6. _____

CLIP HERE

PLEASE RETURN THIS PAGE TO

ARIZONA MEDICINE
321 Meyer-Heard Building
112 N. Central Ave.
Phoenix, Arizona

Topics of Current Medical Interest

RX., DX., AND DRS.

By Guillermo Osler, M.D.

WE talked to Dr. John Z. Bowers in the middle west in June. He's the former Dean of Medicine at Salt Lake City, now in the same job at Wisconsin. . . . He has recently turned down a huge job in the east; inspected the medical facilities for one of the southeast Mediterranean countries; and before that had LOOKED OVER THE ARIZONA POSSIBILITIES FOR TEACHING MEDICINE. . . . We haven't seen a report of that last-mentioned survey, but we have a quote which wasn't said to be restricted, — "Since my visit to Phoenix I have had no further direct contact with the possibility of Arizona medical education. I personally would like to see them go ahead with a two year school, and from many standpoints Arizona would seem more appropriate than New Mexico." . . . The two-year idea is less dramatic than four years, but is logical as a start, allows the way to be prepared for clinical teaching, and by the time hospital services become necessary the size of Phoenix (or Tucson) will be large enough to swing it.

Speaking of medical education, do any of you medium-old codgers remember a famous Yale-Harvard football game, with two famous players, Albie Booth and Barry Wood? . . . Barry Wood was teaching medicine before he graduated, a Professor in St. Louis within a couple of years, and is now Vice-President of the Johns Hopkins Hospital and University. . . . He is author of the first notable change in curriculum in 25 years; the sponsors (for $10,000,000) are the Rockefeller Foundation, the Ford Foundation, the Commonwealth Fund, the U.S.P.H.S., and certain private sources. . . . Selected candidates of "adequate motivation and maturity" will be permitted to enter medical school after only 2 years of college. They will then take a 5-year course in medical school, with continued studies in liberal arts (+ medicine) in the first three years, at which time they will get a B.A. degree. The last year of the 5-year course will be combined with the first year of internship in the J.H.Hosp. . . . Those who enter after 3 or 4 years of college will begin studies in the second year of the 5-year course. . . . This seems to be a big "swuther' over a change which isn't so radical after all. The duration is about the same; the academic year is to be 40 instead of 32 weeks, (except the fifth year, which is to be 50 weeks); and the distinction between top students and us others is a distinct shock, — we thought they only took the cream at Hopkins in the past!

Peter Fisher, a Contributing Editor to the Current Medical Digest (one journal of which Dr. Alvarez is NOT the editor) writes on 'THE BOWEL MYTH'. . . . He really tears apart the advertising campaigns, the quacks, the M.D.s, and the general public for either stressing the need for laxatives, colonics, and 'smoothage', or for going along with the gag. 'Proper elimination', 'irregularity', 'prevention of constipation', 'avoid drastics, use simple laxatives', 'dropped intestines', 'bowel habits', 'daily stools', and 'logish, with headaches' are terms which are gobbledegook and anathema to him. . . . He says that "auto-intoxication" was killed by Alvarez (that man again) years ago. . . . The situation should be explained to the patient, or he/she may need a bowel education program. The prevention of fecal impaction is a real need when a patient is suddenly at bedrest with constipating medication, but he doesn't have to be heckled by one and all about bowel movements. . . . The investigation which should follow a patient's complaint that he doesn't have daily movements is not as easy as prescribing a laxative, but it is in the same class of lethargy which results in the prescription of penicillin for a simple 'cold' rather than explaining its uselessness.

Shortly after this paragraph reaches print (and it only takes 4 to 8 weeks), we will be approaching the time for the 'DIABETES DETECTION DRIVE', in the second week of November. . . . Ten years ago Dr. Hugh Wilkerson of the U.S.P.H.S. decided on "random urinalysies" of the public to find the unknown diabetics. There are a million known diabetics, and about a million undiscovered cases. . . . No one knows how many people are tested, but it calls attention to the plan, and more people are saying, as a chief complaint, "I was found to have sugar in my urine in the Diabetes Detection Drive". An onset with symptoms, and especially with coma, is quite rare. . . . When glycosuria is found, the family physician has to fill in the picture. About 40 to 50% of glycosuria is not due to diabetes, and will have to be ruled out, lucky people. The quickest way to exclude the disease is a blood sugar test taken 2 hours after a heavy carbohydrate meal.

Therapy for CANCER OF THE THYROID looks better since a report by Catz, Starr, and Schwartz of Los Angeles. The patient's thyroid is removed; he is given RADIO-ACTIVE IODINE in a carefully guided program, preceded by a dose of TSH;

in spasticity of the GI tract

Pavatrine®
125 mg.
with Phenobarbital
15 mg.

- *is an effective dual antispasmodic*
- *combining musculotropic and neurotropic action plus mild central nervous system sedation for "the butterfly stomach."*

dosage: one tablet before each meal and at bedtime.

SEARLE

DOCTOR

Now you can own $50,000 permanent Life Insurance at *LESS* THAN THE COST OF TERM: For example the first year cost is as follows: —

Age 30	$179.92
40	$310.34
45	$430.46

We will quote rates to your attorney or accountant at your request or for your personal proposal return to

Also — Part of the Cost is Tax Deductible.

PAUL BOYAJIAN & ASSOC.
1827 W. Camelback Rd.
Phone AM 5-5906
Phoenix, Arizona

PAUL BOYAJIAN & ASSOC. – AM 5-5906
1827 W. Camelback Rd., Phoenix, Arizona

Your Name ____ Age at Nearest Birthday ____

Address ____ City ____ State ____

Amount of Insurance Desired ____ Appro. Tax Bracket ____

All Replys Are Considered Confidential

he is given ample thyroid hormone to keep the pituitary from secreting TSH; and he is required to be examined at intervals of a month to a year. years, which was the start of the program. Of . . . Cases have been controlled for as long as seven the 85 cases in their series, 45 have shown no spread of the disease, 15 are living after metastases have occurred, and 25 have died.

Dr. Hugh Hare of the Los Angeles Tumor Institute has given us some unpublished figures on the use of RADIO-ACTIVE MATERIALS for CANCER (mostly metastatic) of the pleural spaces. . . . In general the substances do not cure the lesions. In general Dr. Hare prefers radioactive gold to radioactive chromic phosphate. In general an instillation may cut down the speed of fluid formation, and this may be a factor in care. (We agree, having recently had 4 cases at one time. Aspirations can lose their novelty when the need becomes a daily one).

Hospital Topics had two items in the same issue which tie up with some dramatic medical affairs of about 20 years ago. One of the items was a description (on the Buyer's Guide section) of a PORTABLE RESPIRATOR, a 'cuirass' type which fits around the chest, and is sold by the J. J. Monaghan Co. . . . The second item was the report of an exhibit by Dennis R. Scanlon Jr., Inc. of imported Swedish surgical instruments at a Hospital Association convention. . . . The connection occurs thru a famous internist and hematologist ('The Leukemias') DR. CLAUDE FORKNER of New York. He had stayed over in Peiping, where he had just finished a 5 year teaching stint at P.U.M.C., to care for the famous polio patient (and now 'late') Fred Snite. By the time he got to the States he had invented a chest respirator, was visited by Dennis Scanlon, went to Sweden to confer with people there who had a chest respirator, and very soon dropped the whole idea because of obstacles and controversies. . . . There were two other angles of slight interest, — Scanlon had introduced Sonia Henie to this country, and Dr. Forkner had described the whole situation (by chance) to this Osler who (by chance) had been working on the possibility of cuirass-type chest respirator! . . . The number of medical procedures Dr. F. did to save Snite's life in China was amazing; he could hardly have been treated better right now in an American Hospital. No wonder Dr. Forkner has been called to see such people as Senator Taft, Gertrude Lawrence, the King of Iran, and hundreds of other celebrities.

The FORD FOUNDATION deserved, and was given, a big vote of heartfelt gratitude for their huge gifts to hospitals last year. . . . We shouldn't let the chance pass to do it again, when the second half of the $200,000,000 in donations was recently distributed. Terrific! Amazing! Wonderful! . . . We know of a small hospital which has used the funds to completely renovate the heating system, get new metal-and-plastic folding chairs, get new Venetian blinds, hire the services of a 'nursing expediter' and a part-time medical director, buy a new incinerator and 40 portable evaporative coolers, and pay part of the costs of a small assembly-room for patients, nurses, and staff. . . . How many of these things would have been obtained without Ford Funds? Would the hospital have been stimulated to Accreditation as it was?

The National Health Institute (Bethesda, Maryland) has reported the possibility that SEROTONIN may be one of the causes of ASTHMA and other ALLERGIC CONDITIONS. Serotonin and histamine are found in tissues, and the amount is greater after anaphylactic shock. . . . Dr. Waalkes and his colleagues are working on various experimental situations where they can measure serotonin; its effect, its antagonists, and the enzymes which destroy it. It is known that reserpine releases all bound serotonin, which may be a start.

Few people should be able to peer into the FUTURE OF CARDIO-VASCULAR DISEASES without a crystal ball as successfully as Dr. Irvine Page of the Cleveland Clinic Foundation. He FORSEES SEVERAL MAJOR ACHIEVEMENTS in that field in the next ten years, namely, — 1. A highly effective chemical control of hypertension. 2. A decline in the incidence of rheumatic fever. 3. Discovery of the causes of chronic nephritis. 4. Finding better clues to therapy for arteriosclerosis. 5. The answer to the riddles of brain chemistry and function. . . . See if YOU can figure the future from the present leads.

Mary Giffin, M.D., of the Mayo Clinic writes about an obscure topic 'PSYCHOPHYSIOLOGIC GYNECOLOGY', in the Journal of Michigan State Medical Society. She quotes Ziskind, who has said, "I stress what is common to most psychiatric thinking, namely that the needs of human beings, when frustrated, result in personality conflicts; that the process of social adaptation is universal, but often unsuccessful; that early life conflicts endure; that persistent conflicts may crystallize into character patterns; that unresolved conflicts may crystallize into character patterns; that unresolved conflicts may be transmitted into symptoms of organic illness through the autonomic nervous system. These do not explain all psychopathology, yet they suffice as a set of working premises." . . . She herself says, — "If early emotional conflicts have led to insecurity about the feminine role, or indeed bitterness about being born a woman, the pelvis and its organs are particularly adapted to the expression of such feelings. In no other specialty are the psyche and the soma so naturally suited for the expression of the unresolved problems of infancy, social adaptation and sexuality as they are in gynecology. Particularly, the

poorly integrated dependency and psychosexual problems of the adult woman find a natural outlet in pain, abnormal function or tissue changes in the pelvis and its contents". . . . These logical statements make one wish for more time, to learn more, to help more.

We asked a friend from Denver, internist Giles Filley, and one from Albuquerque, surgeon Joe Gordon, HOW TO EXPLAIN EMPHYSEMA TO A PATIENT AND FAMILY so they will understand it. They admitted that it was difficult, but suggested the following routine. — 1. Really work at the job of explaining. 2. Show them inspiratory and expiratory films of normal and emphysematous chests. 3. Have group sessions, with questions and answers. 4. Make wire recordings for repetition (and to save your time and voice). 5. Try to put across the idea that "the lung does not comply", tho using such words as 'respond', 'cooperate', 'react', etc. . . . Sometimes nothing works, and the patients would rather grasp at straws.

Inadvertently, Dr. K. C. Baker and his son, Rusty, were listed in the April issue as residing in Phoenix. An unfortunate mistake, for we have no desire to move Dr. Baker and Rusty to the capitol city.

Do You Realize
the time required for you or your secretary to perform the seemingly simple task of making an air reservation and securing the airplane ticket?

How Much Time
do you lose each year in making travel arrangements because of the complexity of travel?

You Could Save
this time and more by using our services for all your travel needs.

With One Phone Call
our staff is working for you

At No Extra Cost
for air, steamship, bus, rail, hotel, ranch or resort reservations; tours, cruises or independent travel, both domestic or foreign; for travel to **CONVENTIONS, CONFERENCES, CLINICS** or just plain travel from "TEMPE to TIMBUCTOO." Oh, Yes, we deliver all travel arrangements to your office or home, Free of Charge.

Try us the next time you travel.

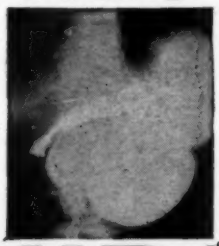
In Travel as in Medicine,
EXPERIENCE COUNTS

CAHILL
WORLD TRAVEL SERVICE
1512 N. Central Avenue — AL 3-6157
Goldwaters — Park Central — CR 4-1778
Phoenix, Arizona

Travel Specialists since 1944

when anxiety and tension "erupts" in the G. I. tract...

IN GASTRIC ULCER



PATHIBAMATE*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (*400 mg.*) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of gastric ulcer — without fear of barbiturate loginess, hangover or habituation . . . *with* PATHILON (*25 mg.*) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.

*Trademark ®Registered Trademark for Tridihexethyl Iodide Lederle

Lederle LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

An Ethical Professional Service for Your Patients Founded 1936

M. D. GRAY

When he calls on you, M. D. Gray, Vice-president of Medical & Dental Finance Bureau, won't waste your time with generalities.
He'll have important facts and figures which, in a few minutes time, will show you how Medical & Dental Finance Bureau will benefit your practice through its ethical, professional service.
Mr. Gray's extensive experience in medical-dental credit and collection work enables him to discuss fully the M & D solution to the money problems that confront many people when professional services are required.

Medical & Dental Finance Bureau

First Street at Willetta • Phoenix Al 8-7758
507 Valley Nat'l. Bldg.•Tucson MA 3-9421

Organization Page

CIVICS

Norman A. Ross, M.D.

"SURVEY OF ONE HUNDRED CASES OF WHIPLASH INJURY AFTER SETTLEMENT OF LITIGATION"*

NICHOLAS GOTTEN, M.D., MEMPHIS, TENNESSEE

(One hundred patients with previously diagnosed cervical neck strain following auto accidents whose litigation on compensation claims had been settled were queried as to their present clinical status. After legal claims for damage were completed, 88 per cent showed recovery, and over half of these had no residual complaints. Many emotional factors, but especially those concerning monetary compensation, greatly confuse proper medical evaluation and appear to be the cause of the wide divergence of professional prognostic opinions relative to this particular injury.)

A reprint of the above paper was sent to me by one of the one hundred or more insurance adjusters in our state, who was introduced as an officer of their association at their annual dinner.

If you haven't read this paper may we recommend that you do so before you make a diagnosis of cervical strain, cervical dislocation, cervical fracture, or if you prefer the homey terminology "whiplash injury".

PHOENIX FIELD STATION SECTION

The following quotes from a letter received March 1, 1957, really excited some of we ARIZONA MEDICAL SCHOOL proponents.

"Thank you for your inquiry and interest in our Field Station activities and in the proposals for its relocation.

"As you may recall, this unit and two preceeding ones of the Public Health Service (headquartered at the Communicable Disease Center, Atlanta, Georgia) have been working in the Phoenix area since 1949 on fly control, diarrheal disease and polio studies. Some of the studies on polio by Drs. Walton, Melnick and Prindle are now in press and should be available in the near future.

"The present studies have been concerned with the diarrheal diseases using Sacaton and Guadalupe as long-range study areas. They have been directed principally toward a better understanding of the etiology and control of the causative organisms backed by thorough clinical workup of patients at the Pima Indian Hospital at Sacaton. A part of the research has been concerned with reduction of vectors, such as flies and roaches, associated with municipal refuse disposal. We are now able to convert municipal refuse consistently to a high-grade humus resembling peat moss that is suitable for soil conditioning, and have about completed a plant at Chandler to demonstrate the practicality of the method.

"We have recently been advised by Dr. S. W. Simmons, Chief of our Branch, that he anticipates a consolidation of our research with that going on at Prestonsburg, Kentucky, in the near future and that he would like to locate the combined unit somewhere in the arid Southwest. In addition to diarrheal disease and composting studies, he would like to do some work on the toxicology of pesticides, particularly the agricultural insecticides. The consolidated unit would have 35-40 employees initially and almost half would be professional personnel such as medical officers, engineers, biologists, chemists, etc. The group could work most advantageously if they were located on a College or University campus. An estimated 10,000 square feet of floor space suitable for chemistry, bacteriology, biology and offices are required. In addition, some outdoor space for a small compliment of epidemic and disaster aid equipment would be needed.

"For various reasons our immediate studies could be done best in the Phoenix area. Some of these are (1) experience and background data in the area, (2) a nearly completed composting plant at Chandler, (3) interlacing agricultural and residential areas where considerable volumes of insecticides are used (Tucson has practically none of this – Las Cruces, New Mexico does

*Reproduced from Oct. 27, 1956 issue of the Journal of American Medical Association with their permission.

have), and (4) some of our trained subprofessional personnel who would probably not move from Phoenix. I am sure that on this basis Dr. Simmons would locate the combined studies in the Phoenix area providing adequate space were available.

"We thought this aspect of the relocation problem had been solved when it looked like a former outdated dormitory on the Arizona State College Campus at Tempe might be available to us. However, following a Board of Regents meeting, Dr. Gammage informed us that the Board advised him to use the building for direct school purposes if possible. So if consideration of this building (Alpha Hall) cannot be reopened or a satisfactory alternate cannot be found, the Phoenix area will probably have to be dropped for further consideration as a location for our expanded studies."

On June 20, 1957, Dr. M. H. Goodwin, Jr., Scientist Director, Assistant Chief, Technology Branch, at the time of his courtesy call to Governor Ernest W. McFarland, announced that negotiations were complete and that the new name of what had been the Cumberland Field Station Section, Communicable Disease Center, at Prestonsburg, Kentucky, would be the Phoenix Field Station Section, Communicable Disease Center, Phoenix, Arizona.

This is what I learned about our new Health Station, for you who are interested in organization: The Phoenix Field Station Section is to be the southwestern technical laboratory of the Technical Branch of the Communicable Disease Center (Atlanta, Georgia). The Communicable Disease Center is a Field Center of the Bureau of State Services of the U. S. Public Health Service.

We can best estimate that part of the communicable disease program that will be carried out in the Phoenix Field Station Section by reviewing the assigned duties of the Cumberland Field Station Section:

(A) Plans and conducts investigations to develop improved methods of control of communicable disease with special reference to enteric infections. These studies include:

(1) Evaluation of methods for measuring prevalence of diarrheal diseases.

(2) Delineation of etiological agents involved.

(3) Determination of relative significance of environmental factors and of vectors on the interfamilial spread of diarrheal diseases.

(4) Investigate ecology of vectors, reservoirs and etiological agents.

(B) On the basis of information developed, devise, apply and evaluate control procedures.

• • •

CDC — THE COMMUNICABLE DISEASE CENTER

"Foreword"

"Communicable diseases are responsible for more than 100,000 deaths each year in the United States.

"They bring pain and suffering to countless others, they severely disrupt family life, they cause school children to be absent for a 100 million school days a year, and they result in an annual industrial loss equal to $2 billion worth of American productivity.

Thus the conquest of communicable disease is — and must be for some time to come — a major public health goal of the Public Health Service."

(s) L. E. Burney
Surgeon General

• • •

OUR LOCAL SCHOOLS?

What amount of your local school dollar is raised by county property tax? More about governmental aid to education.

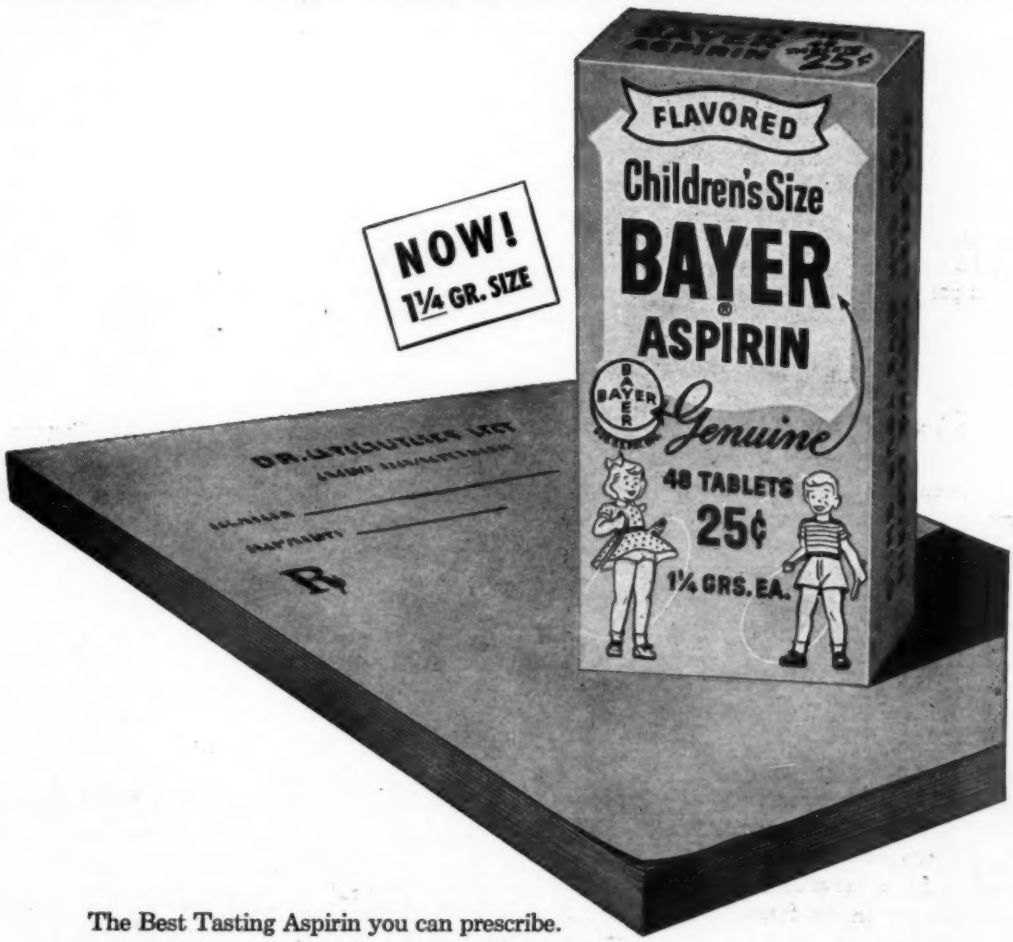
Read "The Town That Lit The Integration Fuse," but particularly page 101 of this article in the June 22, 1957 issue of the Saturday Evening Post, before you commit yourself on this "local" social-economic issue.

THE U.S. COMMITTEE OF THE WORLD MEDICAL ASSOCIATION

THE U. S. Committee of the World Medical Association reported ratification of a medical civil defense emblem for international adoption to protect civilian medical personnel in time of war; establishment of a central repository for medical credentials; and development of a library project to furnish books and periodicals to medical libraries abroad.

little

How to win friends ...



The Best Tasting Aspirin you can prescribe.

The Flavor Remains Stable down to the last tablet.

25¢ Bottle of 48 tablets (1¼ grs. each).

We will be pleased to send samples on request.

THE BAYER COMPANY DIVISION of Sterling Drug Inc. 1450 Broadway, New York 18, N. Y.

THE DIAGNOSIS OF MENTAL RETARDATION

Clarence G. Salsbury, M.D.*

THE clinical facility for diagnosis of mental retardation established by the Arizona State Department of Health at 1633 "A" West Jefferson Street, Phoenix, Arizona, provides privacy as well as ample space for observation of the child. Four efficiency apartments have been easily adapted to the purpose of providing a reception and waiting area, individual conference rooms, an examination room, and a small library space.

Applications are received from the parents or legal guardians. The child cannot be older than eight years of age. The emphasis is on early case finding. The diagnostic services are designed to help parents give the best possible guidance and care while in the home and community. The diagnosis must be based on all available evidence as to the child's potentialities, whether educable, only trainable, or completely dependent.

The application contact is followed as promptly as possible with a conference of both parents, the child, and the psychiatric social worker. This contact may be made at the home. Usually it is held at the Child Development Center.

The length of the waiting list is increasing, but this is due primarily to an unbalance in the hours of service of the clinical staff members.

The child returns to the clinic for a complete medical examination. The pediatrician determines what laboratory services are to be accomplished. X-rays must be indicated. Blood and serum findings, urine study for diacetic acids, protein bound iodine, and sugar. Electroencephalogram may be required.

Special consultant services are provided in accord with the medical examiner's recommendations. These include neurology, ophthalmology, otolaryngology, and orthopedic evaluation. Special audiology and special evaluations may also be required. Psychological determinations have been done routinely on all children admitted for observation. This may not necessarily follow in the future as experience of the pediatrician may prove adequate in making his own evaluation of the mental capacity of the child. He will then request psychological studies only in the more difficult differential diagnostic situations.

The individual services of psychiatric social worker, pediatric clinicians, the psychologist, and the laboratory and consultant take approximately six weeks to complete. There then follows one or more case conferences in the instance of each child. It is here that recommendations are made for the immediate future of the child. If at all possible, the child's private physician and the referring individual or agency is present at the case conferences. The jurisdictional public health nurse may be present. A representative of a resource agency may be invited to be present. At this time it is concluded whether the child is a mental retardate, whether there is evidence of emotional or physical causes for retardation, or if there are combinations of these.

At the time of the case conference it may be determined that the mentally retarded child will need continued observation before a more reliable estimate of ability can be made. It may be that the child needs some special social training before home and community adjustment can be satisfactorily accomplished. It may be that the child needs to be given further special observations in order to evaluate the diagnostic and prognostic acumen of the staff. In any of these instances the referral is made within the resources of the staff. The observation center is established in conjunction with the diagnostic center at 1633 West Jefferson. A child development specialist is assigned to this activity and in a playroom environment provides continued study and direction in the group activities provided for the child. The length of time that the individual may be under this special supervision varies with the child's needs and the recommendations of the staff.

There can be no more than eight children in the observation center at any one time. It may be necessary to limit the number to less than eight. Several hyperactive retardates may take the total attention of the development specialist. Parents are required to observe their child in this supervised activity. The specialist confers with them on the follow-up at the home and community level.

The interest of the staff in the mentally retard-

*Commissioner of the State of Arizona Department of Public Health.

ed child does not end with the diagnosis. The child's continued medical care is of priority importance. The parents are advised to seek the services of such resource agencies as are deemed desirable. Medical care is not the function of the Child Development Center. The parents and the child's regular physician will determine the future medical care program. Special psychiatric care must be obtained by the family from the private physician or from the guidance center as Family Society, as indicated. Other special services may be recommended. These again should be discussed with the physician in charge of the child's general medical care and plans made with the parents in accordance.

The public health department is directly or indirectly concerned with the follow-up. The public health nurse can assist the family in gauging the progress of the child in the home and in relation to the community. She can assist the parent in assuring the recommended attitudes and procedures of parent-child conduct in the home and in the community. This nurse is a line of communication between the parent and the child's physician and between these agents and the Child Development Center.

If possible the diagnostic team at the Center wants to re-evaluate the child each year for five years at least. Re-evaluation will indicate any error in prognosis. This will permit recommending changes in further follow-up training and care of the retardate. The parent-staff conference will help to evaluate parent progress in adjustments to the needs of the child and the ability of the parent to meet these needs. Re-evaluations will provide valued assistance to public schools and vocational training agencies by providing a more accurate estimate of the child's potentialities and what will be his optimum environment for achievement.

FOR RENT

Completely Air Conditioned Medical Suite

3 — Private offices (approx. 800 ft.) Dark Room facilities, plus large reception room nicely decorated, tile floors, separate entrances, front and rear parking. Very reasonable rent.

311 West McDowell Road

Call: Jack Silver AL 8-1184 or WI 3-9107

PROPOSED PROGRAM TO COMBAT ORIENTAL INFLUENZA IN THE UNITED STATES

I. *Introduction*

REPORTS indicate an epidemic of influenza began in Hong Kong and Singapore in April 1957. Then, in rapid succession, almost simultaneous epidemics occurred in Taiwan, the Philippines, the Malayan States, Indonesia, Japan and India. There have been some reports of cases among U. S. military personnel in the Far East. A number of sharp outbreaks also have been reported aboard commercial and U. S. Naval vessels.

The disease is characterized by rapid onset, fever, malaise, muscle aches, coryza of 3 to 5 days' duration. In general, the attack rate seems to be about 15 to 20 per cent of the population in the affected countries. Mortality rates have been low.

Early in June, the Surgeon General of the U. S. Public Health Service called a series of meetings at which representatives of the medical and public health professions were invited to give advice with respect to preliminary plans for dealing with the influenza epidemic should it become widespread in the United States. On June 26, representatives of the American Medical Association met with the Surgeon General to discuss the question of medical manpower demands and other precautionary measures in the event that an epidemic should occur.

The Executive Committee of the Board of Trustees promptly pledged the support and cooperation of the American Medical Association. It requested that a program of action be prepared and submitted to the Board of Trustees for study and appropriate action.

Subsequently, a meeting was held, July 9, 1957, at AMA headquarters in Chicago to discuss a program of action and to draft recommendations for presentation to the Board. Dr. Harold C. Lueth presided over the meeting which was attended by Dr. William H. Stewart of the Public Health Service and Dr. Madison D. Brown of the American Hospital Association. AMA representatives included Dr. George F. Lull, Dr. Austin Smith, Dr. Edward Pinckney, Mr. Leo Brown, Mr. John Bach, Mr. Tom Hendricks and Mr. Frank W. Barton.

II. *Summary of Data Reviewed and Factors Considered*

The current status of the influenza epidemic has been discussed in an editorial entitled "Oriental Influenza Epidemic" JAMA 164:974, June 29, 1957; Public Health News release, JAMA 164:1136-7, July 6, 1957, and in a news release of the Public Health Service of June 10, 1957.

Through the Public Health Service and the World Health Organization, reports of the disease, worldwide, are received daily. Regular weekly reports, morbidity and mortality, reflect the current situation. There are several reports of influenza occurring in military bases in the Continental U. S. Also, some reports of influenza epidemics have been suggested in civilian communities. However, they have not been substantiated by virus identification.

A brief summary of the influenza epidemic characteristics includes:

(a) Infective agent – virus Japan 507 of 1957
(b) Incubation period – probably 1-2 days
(c) Incidence – variable, figures not entirely reliable – 15-20 per cent.
(d) Contagious period – uncertain, 1-5 days
(e) Transmission – droplet infection
(f) Symptoms – fever, prostration, headache, lassitude
(f) Signs – coryza
(h) Course – generally short duration, 3-5 days
(i) Complications – rate, not serious except in the very young, old or those debilitated
(j) Treatment – no specific therapy, usually symptomatic; antibiotics of little value; good nursing care
(k) Mortality – figures unreliable, probably quite low except in the young, old or those debilitated

There are inherent problems in attempts to draw conclusions from the influenza epidemics of the Far East and its appearance in the Continental United States. In the Far East where overcrowding, malnutrition, insufficient sanitation and presence of other human diseases are prevalent, the situation differs from that in the United States. The appearance of the disease among United States military personnel cannot be used, without modification, in forecasting probable effects among civilian communities and personnel as factors such as earlier immunization of military personnel with influenza vaccine, strict military control, regular sick calls, ready availability of medical and hospital care have their influence on the disease. Experiences in the Far East among military and civilian personnel are, however, the only guides that are currently available.

Consideration must be given to the medical, economic, and political impact of any epidemic that appears suddenly and attacks 15-20 per cent of the population. The AMA would do well to have sound medical plans and an effective organization to meet the medical aspects of an influenza epidemic. The rapid onset of the epidemic makes it mandatory to have plans prepared well in advance and to see that local medical societies are cognizant of the magnitude of the problem prior to the occurrence of the epidemic. It is evident from experience gained in poliomyelitis outbreaks that the public looks to the medical profession and the Public Health Service for leadership in these emergency situations. It is imperative that the AMA have a plan that is flexible enough to cope with a quick-spreading influenza epidemic. The plan must be realistic and suitable for implementation by state and local county medical societies.

Reports indicate the degree of prostration is such that patients become bedridden within a short period of time. In the military, the majority of patients were hospitalized. Among civilian groups, greater reliance must, of necessity, be placed on home care as the current high occupancy rates in civilian hospitals does not permit large numbers of influenza patients gaining admissions to hospitals. Special situations would develop in civilian groups if the disease occurs in camps, large meetings, or assemblies as too frequently there are not adequate reserve facilities available for providing bed care for large numbers of patients who suddenly become ill. Each community should make a serious study and have situable plans to cope with epidemics that might occur.

The use of vaccine in an influenza epidemic poses many problems. There may be difficulty in obtaining a large enough quantity of vaccine of this specific strain early enough so that it may be administered in sufficient time to evoke an adequate protective antibody response. There is question as to type specificity of vaccine. There would be difficulty in administering the vaccine depending upon public and professional acceptance. If it were a mild influenza epi-

demic, it is quite likely that the medical profession would find it difficult to use the supply manufactured. If it were a sudden large-scale epidemic, there would be a great clamor for the vaccine at a time when the epidemic is at its peak and when the vaccine would be the least effective. This would present a difficult problem. Method of control of the vaccine would present all of the problems encountered by the distribution of the Salk poliomyelitis vaccine.

Antibiotics are generally agreed to be ineffective in virus infections. It is felt that there would be a certain amount of public demand for the use of antibiotics in influenza epidemics. Since it is well known that primarily influenza infections often are followed by secondary bacterial infections, a degree of justification in the use of antibiotics can be advanced.

In addition to the resources within the Assotion there are a number of other resources available. The Surgeon General of the Public Health Service has pledged the resources of the Public Health Service to the AMA in the matter of furnishing information and assistance preceding and during the period of an influenza epidemic. These include: technical reports giving incidence rates, nationwide and worldwide; resources for the isolation and identification of infecting agents; sending of special epidemiologists to areas upon request for studies in the spread and control of epidemics; assistance to the state and local committees upon request for augmentation during an influenza epidemic.

The Department of Defense can be requested to furnish information concerning its experience in influenza cases among the military personnel and in their clinical handling of these patients. The Commission on Influenza of the Armed Forces Epidemiology Board has made continuing studies on the problem of influenza and could be requested to furnish specific information. The World Health Organization has a steady flow of information on reported influenza cases as they occur throughout the world.

III. *Assumption as to Alternate Courses Epidemic May Take*

Based upon the foregoing information reviewed by the study group on July 9, it appears that should an influenza epidemic break out in the United States, it would take the following alternate courses:

(1) Few minor sporadic outbreaks this summer but disappearing without large-scale epidemic;

(2) Explosive outbreak of influenza in the summer of 1957 (before September 1) with same attack rate and mortality rate as currently exists;

(3) Few minor sporadic outbreaks this summer with explosive outbreak in fall or winter of 1957 (after September 1) with same attack rate and mortality rate as currently exists;

(4) Explosive outbreak in fall or winter with high attack rate and high mortality rate (similar to 1918).

IV. *Recommended Program of Action for AMA*

The study group believes that the American Medical Association should provide the leadership in formulating an appropriate informational and operational program to acquaint state and county medical societies, as well as the general public, of the possible outbreak of a rapidly-spreading type of influenza in the United States. The rapid onset of this influenza makes it essential to inform medical societies of the magnitude of the problem well in advance and to encourage the development of plans prior to any outbreak. Too little and too late could be disastrous, even though it is recognized that some portions of the program may never be used.

It is therefore suggested that the Board of Trustees give consideration to adoption of the following courses of action:

A. *Informational Phase*

(1) Immediate publication of a series of articles in the AMA Journal informing the membership of the nature and extent of the current influenza epidemic in the Far East. These articles should provide scientific data so that influenza cases may be recognized immediately and properly treated.

(2) Publication of a report in the AMA Journal from the Council on Drugs concerning therapy and use of antibiotics in influenza cases.

(3) Publication in the AMA Journal of articles prepared by the Public Health Service and other agencies covering the clinical aspects and current reports of the incidence of the disease. Dr. William H. Stewart indicated the PHS will provide a steady flow of information.

(4) Publicize in Today's Health and through other appropriate channels information which will reassure the general public there is no cause for alarm concerning an influenza outbreak in

view of the fact the illness is of short duration, it is generally mild and with few complications, and it has a very low mortality rate. Emphasis should be made concerning the close cooperation between the AMA and the Public Health Service and that adequate plans and operational facilities are available to the medical profession to cope with the problem.

(5) An outline plan of public information should be prepared and instituted by the Public Relations Department.

(6) Should it appear the epidemic will reach explosive outbreak, then informational pamphlets, spot radio and TV announcements should be prepared by the Public Relations Department in cooperation with the Bureau of Health Education. In turn, other phases of the program should be expanded and intensified.

B. *Operational Phase*

(1) Immediate steps should be taken to inform state and county medical societies of the impact of influenza epidemics on normal professional services.

(2) The AMA should suggest that state and county medical societies prepare or develop adequate stand-by programs and plans to cope with any such epidemics.

(3) In the formulation of these plans, consideration should be given to expanded professional care through the utilization of all medical personnel, regardless of type of practice.

(4) Plans should include mobilization of other professional resources such as nurses, nurses' aides, pharmacists, and others.

(5) Action to make full use of hospital facilities should be explored, such as curtailment of elective surgery, diagnostic studies, etc. The use of FCDA Emergency Hospital units might be required.

(6) Recommend that state and local programs be coordinated with public health agencies and state and local health departments. There should be close cooperation concerning diagnosing and reporting influenza cases. Joint planning may be advisable in many areas.

The Committee on Civil Defense of the Council on National Defense offers its full cooperation to the Board of Trustees in the implementation of the proposed program. The Committee maintains liaison with state emergency medical service committees and through its other numerous contacts in the field of medical disaster preparedness, it could assist in coordinating the activities of the Association, the Public Health Service, and the state medical societies.

"INDUSTRIAL HEALTH"

William E. Shepard, M.D., Chairman,
Council on Industrial Health of AMA

As chairman of the Council on Industrial Health of the American Medical Association, which is now 21 years old, one of our most important jobs, as I see it since I took over the chairmanship three years ago, is to try to learn what is going on in the states and to learn what you would like us to do to help you with your problems. We have a session once a year, which I think you know about, called the Industrial Health Congress in which we try to put up a pretty good program, one which will interest the chairmen of the state society committees on industrial health; and during that session we have at least half-a-day, and I think this year we will have one full day, to discuss local problems in the various states. We have a chance to let each one report briefly on what they are doing, what their problems are and others to ask questions and so forth. I don't know of anything more important that the Council on Industrial Health of the American Medical Association can do, as Doctor Hamer may agree, than to keep in step with what the problems are in the states. Briefly, we have 38 state associations which have committees on industrial health. Some are doing a very fine job in keeping pace with their problems pretty well, we learn a great deal from them. Others haven't done quite so much but probably because they haven't had so many problems; that is one of the things we'd like to know about.

And just a word, if I may, Doctor Craig, to let people know what the council is like. This is one of the councils, as Doctor Hamer could tell you, which was appointed by the board of trustees. We are directly responsible to the Board of Trustees of the American Medical Association. Our job is briefly, and I am simplifying this now with brevity, to do what we can to help American medicine catch up with the needs of industry. There are many in-

dustries, particular the larger ones, which have pretty well organized programs in health and safety and which run along very nicely. They represent approximately 15 per cent of the employers of this country, I'm talking now about General Motors, General Electric, Westinghouse, the big ones; the other 85 per cent of the employers of this country are too small, having less than 1,000 employees, down around from 15 to 25. They are too small ever to expect to have a full-time industrial physician who specializes in that field and must, therefore, and properly I think, depend upon the willingness of the local physician to put in part-time in industry helping to solve their problems. The represent about 70 per cent of the employees of the country; roughly, some 45 million. So that here we have one portion, a small percentage of the employees of the country, who have pretty good medical programs in their work-place and some 70 per cent who have little or none, depending on how much time and interest the physician is willing to put in on part-time work in industry. The council has four standing committees which I may have occasion to name later. Among these standing committees are various subcommittees which have published certain materials that have come out recently which I will mention later.

One most active committee I met with in New York during the AMA convention was on industrial ophthalmology. Now, it is amazing how little we know, how little industry knows, about the defects of eyesight in industry and about the whole problem of illumination in industry. This committee is composed of the six or seven or eight leading ophthalmologists in the country and we hope to have some material ready for you soon. We prepared a document while I was there two weeks ago on fluorescent lighting. They also corrected or approved, a corrected edition of that Snellen Chart that the AMA has been putting out. It's not so big that most any industry or school can get, which hasn't been entirely accurate and which in the 20 years that we have been distributing it, gradually deteriorated. It deteriorated because the printers weren't always as accurate as they should have been. The measurement of the letters, therefore, was not quite correct. The paper deteriorated being a little bit more gray than it should have been; therefore, less contrast. The ink deteriorated so that it wasn't as black as it should have been, and we finally got that straightened out. The amazing thing is that over the years some 20,000 of those charts are requested by schools, public schools all over the country, and we now have to have that in better shape.

There's another committee most interesting to me on the dermatoses of industry. Doctor Dowling of Boston and a distinguished group of Dermatologists are getting out a series of seven papers and brochures, short brochures, which will be helpful to those physicians working in industry and, we hope, covering these puzzling problems of the industrial dermatoses.

There is another committee under Doctor Kehoe of the Kettering Laboratory in Cleveland which handles the problems of post-graduate training; handles the matter of graduate training for those who wish to specialize in the field of industrial medicine and who wish to prepare themselves for a board of certification which, as you know, has been recently approved by the AMA.

Another committee dealing vigorously, if still somewhat ineffectively, with the problem of trying for goodness' sake to get the manufacturer, to get the management side of industry in this country to realize how much they need medical advice from time to time and how seriously they lay themselves open to serious difficulties if they don't have medical advice at least on a part-time basis. We have close contacts with the National Association of Manufacturers which haven't been too satisfactory, with the United States Chamber of Commerce, with the American Management Association which is coming along very nicely, and that committee's job, under Doctor Neuquist, from the Texaco Company, is constantly dealing with these trade associations representing the management group.

Another committee deals largely with the labor-union group, and I must say, handles things in a very reasonable manner. Well, roughly these are the things we try to do.

Now, I think the only other thing I would like to say in way of preparation, then I want to hear your problems, is that the house of delegates approved at the last meeting in New York a statement which we have worked over very carefully for almost a year which is entitled: "The Scope, Objectives and Functions of Occupational Health Programs," and without going

into this in detail, it hasn't been printed yet but will be out very shortly, this is the first time that the American Medical Association has agreed upon a statement which defines the needs and the bounds of industrial health programs. This has to do solely with the safeguarding of the employee's health at work. We have no concern, in our council, with medical care for sick employees. That's entirely another matter and falls under the province of the council on medical service. I think you will find this statement helpful if you fall into discussion or argumentation with your medical colleagues, or in fact, with employees or employers as well as union groups. I think you will find it a pretty sound and sensible document and it is one which will be included in the report of the Larson Commission, that is the commission on the Study of Prepayment Medical Care Plans. I will be glad to discuss that further in full detail with you if you like. I am glad to see this brochure just out from the AMA entitled: "The AMA in Action" in which it describes what the association tries to do, not only for its own members, but for the community and for the field of occupational health, the legislature as well. I'll pass that around if I may, Doctor Craig, take a look at it, pass it on. That happens to be my only copy so I'd like to have it back. We have another publication which may interest some of you which isn't really our publication, though I think we are about to endorse it, entitled: "Guide for Conservation of Hearing in Noise," and as some of you may know, this is becoming an increasingly serious problem. Most people after age 45 lose some hearing as we lose some of the elasticity of our limbs and develop presbyopia. There are several states which are already giving full awards to any employee who can demonstrate an appreciable loss of hearing after age 45 on the assumption that this loss of hearing is an industrial, occupational disease; rather an alarming and non-medical type of position which we deprecate. This "Guide to Conservation of Hearing in Noise" is a document which will be at your disposal in the very near future. There was an exceedingly interesting discussion in Detroit a year ago on occupational medicine in industrial relations which has just been published in reprint form from the archives of industrial health and which is available to you if you would like to send in for it.

Now, there are a number of other things that I won't go into but I've just one more item here which may interest some of you and that is the new report by Henry Doyle and Robert Flinn of the Public Health Service, Mr. Flinn being now the Medical Director of the United States Bureau of Mines, surveying the whole situation on silicosis, in which they show that although the early studies on silicosis – Dunn, Bicher and Joseph and the early lead mining days – are quite sound and the control measures which were adopted then are apparently effective; nevertheless, there is still entirely too much silicosis in the country and Arizona is one of the states in which there are fewer cases than other mining states. Arizona is one of the states which has under 100 cases reported for a year and still one wonders why there are still 100 cases. So, of course, this being an exceedingly difficult problem, as you know, progressive even after you have removed the hazard, and so on.

I think that gives you briefly some of the objectives and some of the working results of the council on industrial health and now, I'd like very much to hear how things go in Arizona; what the problem is with respect to the large industries and the small ones and since I see a number of safety people here, may I also add we in medicine and the council on industrial health consider ourselves the partners of the safety directors, at least we like to be thought of as such. We think that the safety program has been exceedingly successful. It's the one field in the whole safety movement that has been successful. Actually, accidents on highways continue at an appalling pace; accidents in the homes increase continually, but in industry, the accident rate has come down in an amazing manner for which we salute you. You are concerned with safety in industry. We think that there is a large medical aspect to the prevention of accidents and, of course, to the return of the accidentally injured employee to full capacity; and we would like to consider ourselves as partners with the safety directors, so I hope you will feel free to bring up questions on safety as well as others. I didn't mention that we have a very effective but new commission of the American Medical Association, appointed by the trustees a year ago, called the Commission on Medical Aspects of Automobile Injuries and Deaths. It is headed by Doctor Woodruff who is a powerhouse and who insists

that medicine has much responsibility in the prevention of these disabling accidents – accidents on the highways.

STUDY SHOWS "PATCHWORK" OF CHEMICAL LAWS

A RECENT American Medical Association study showed a "patchwork" of state and federal laws regarding the labeling of hazardous chemicals, and pointed up the need for a uniform law.

Bernard E. Conley, Ph.D., secretary of the AMA's committee on toxicology, said his committee and the AMA law department conducted the study in preparation for drafting a model chemical labeling law. A fall conference of interested parties in government, industry and medicine is planned to draft the model law, which will then be submitted to legislative bodies.

The proposed legislation is intended to reduce careless and ignorant handling of potentially harmful products in and around the home, in small businesses and in other areas where control of over-exposure to chemicals is not as efficient as in the manufacturing process, Conley said.

The law will require informative labeling, including listing of possibly harmful ingredients, their potentialities for harm, directions for safe use, and first-aid instructions.

At present all the states require labeling of narcotics; 93 per cent of drugs, and 85 per cent of pesticides. However, only 52 per cent require labeling of caustics and 10 per cent of industrial chemicals. Only New York, Indiana, Kansas and Connecticut regulate hazardous substances in household products.

At the national level, there are several chemical laws, including the Food, Drug and Cosmetic Act of 1938; the Insecticide, Fungicide and Rodenticide Act of 1947, and the Federal Caustic Poisons Act of 1927. In addition, the Interstate Commerce Commission and the Post Office Department have regulations regarding labeling, uses and transportation of chemicals.

The hodge-podge of laws is confusing and leads to omission of many necessary regulations, Conley said. For instance, only 10 of 25 state caustic acid laws are similiar to the Federal Caustic Poisons Act. The federal act itself is limited to only 12 caustic and corrosive acids and alkalies in specified concentrations, of which some are known to be hazardous in lower concentrations. In addition, many dangerous acids and alkalies are not even included in the law.

Of the 46 states with drug laws, only 19 conform to the Federal Foods, Drug and Cosmetic Act of 1938, even though 40 per cent of all drugs sold are confined to intrastate commerce, Conley said.

All but four states have poison laws or regulate the sale of poisons in some way. Only five states (California, Oregon, Illinois, New York and New Jersey) require precautionary labeling of chemical products used in industrial establishments. Other states have special laws regulating specific individual chemicals. In fact, there are 16 types of these special laws and some states have as many as five such statutes.

"By and large there is greater agreement between state and federal laws" in the area of pesticides than in any other major class of chemical products, Conley said. Forty-three states have laws governing the sale and distribution of pesticides.

The need for a uniform law is quite apparent, he said. Uniformity not only will offer greater protection to the users of chemicals, but will facilitate educating the public to the significance of warning labels. It will also avoid the need for special packaging and labeling for each state, thus easing distribution and decreasing the cost of chemical products.

COMMITTEE ON POISONING CONTROL

DOCTOR COBB briefed the membership as to the origin and scope of operation of the poisoning control program and establishment of poison control centers. Originated by the American Pediatrics Association on the national level, each state pediatrics society was solicited and urged to take an interest and active part in support of the objectives. The local pediatricians spearheaded the movement.

The poisoning control program has two objectives, (1) to establish preventive measures through an educational program to alert the public to the dangers of poisonous substances and needless loss of life through carelessness of use or application or accessibility thereto, espe-

cially when stored in the reach of children, and (2) to provide ready information for methods of treatment, to be made available to physicians and hospitals through the establishment of regional poison control centers within the state, particularly in hospitals where 24-hour call services are maintained with registered nurses in attendance.

In the inception of the program, financial assistance is necessary to be obtained from interested groups; however, next year when the program is underway, it is anticipated the College of Pharmacy of the University of Arizona which will administer the project and carry on much of the processing and recording detail, will find ways and means within its budget to cover minimal costs.

A two-card system is proposed to be established, a white card to bear on one side the name of the product with adequate description thereof, manufacturer thereof, etc., and on the reverse side thereof, the intoxicant ingredients; and a yellow card will set forth methods of treatment. The college of pharmacy will assume the responsibility of keeping these cards current and continually keep abreast of new products, ingredients and treatment.

In this latter instance, the establishment of a medical advisory board seems most desirable to assist the college in establishment of medically accepted modes of treatment. It was the consensus that this could be best handled on the local medical society level and, inasmuch as much of the detail will be carried on in Tucson, the Pima County Medical Society should be called upon to appoint a committee of interested and active participants who would serve the college in such capacity. Doctor Jarrett agreed that the safety committee of Maricopa County Medical Society of which he is chairman would be agreeable to reviewing the recommendations of the Pima committee and offer any suggestions or comments indicated.

It was further suggested that it would be wisdom to develop and provide a readily available list of essential preparation ingredient needs and necessary application equipment therefor which could be used as a guide in the establishment of antidote kits.

Tucson Medical Center and eventually St. Mary's Hospital will be poison control centers in the Pima area. While it was suggested certain hospitals in Phoenix be similarly designated, it was the feeling that all major hospitals in the city should have such centers. Recognizing the cost factor, Doctor Brewer indicated that possibly 15 or 16 hospitals in the state would be initially so designated.

In the State of Florida apparently there is established and in operation a well developed poison control program. The authorities have extended full cooperation and assistance to Arizona in the early stages of its planning. A complete set of record cards used in its system has been obtained and their content is presently being checked and verified. It was felt advisable to gain knowledge of the California program and effort to this end will be continued; likewise, contact with the American Academy of Pediatrics, the Council on Pharmacy of the American Medical Association, and any other comparable group that may be helpful was urged. The executive secretary offered to be helpful to this end and initiate such correspondence.

Legal Opinion

The committee expressed need for initial legal counsel to review the program and submit an opinion particularly as relates to any possible violation of "privileged communication" in the processing of individual poisoning cases for statistical purposes, particularly as regards type of poisoning, product involved, method of treatment administered, and result of such application. Approval of the use of association counsel therefor will be sought.

The committee suggested contact by the executive secretary with the State Department of Health to determine whether or not the reporting of accidental and/or intentional poisoning might be required by statute as pertains to the "privileged communication". This not being a requirement what steps would be necessary to make reporting of poisonings comply with that current, covering statute as regards reporting of venereal diseases, gunshot wounds, etc.

Publicity

Dean Brewer reported that his department has submitted two articles on poisoning control to the Editor-in-Chief for publication in Arizona Medicine Journal and that they have been so accepted. These articles relate to "new poisons" being marketed for public use and practical methods of treating snake bite.

It was determined that the name of The Arizona Medical Association, Inc., should be placed in the heading of the report form.

It was recommended that the secretary of the association write each component county medical society for appointment of one member as liaison representative, to keep the poisoning control program current and active in that county.

MEETING ADJOURNED AT 5:35 p.m.

Leslie B. Smith, M.D., Secretary

By Robert Carpenter, Executive Secretary

August 1, 1957 Progress Report of the Poison Control Information Center at the University of Arizona College of Pharmacy

WORK at the Poison Control Center is progressing well. The Florida nucleus file is almost ready for duplication pending approval of the Poison Control File Advisory Committee, which will be called together at the earliest possible time.

For the month of July, there were twenty-eight case reports received. As they did last month, aspirin and kerosene again led the list, along with insecticides, of reported poison cases. 71% of all reported cases involved children 5 years of age and under.

The time of day of the incidents was as follows:

50% occurred between 6 A.M. and noon
35% occurred between noon and 6 P.M.
15% occurred between 6 P.M. and midnight
None occurred between midnight and 6 A.M.

The twenty-eight reported included one death, a one year old child who swallowed kerosene. Except for 3, all cases reported were accidental. The causative agents and age groups are shown in the table.

	AGE											
POISON	Under 1	1	2	3	4	5	6-10	11-15	16-25	Over 25	Unknown	Total
Hypnotics and Sedatives			1		1					1		3
Analgesics and Antipyretics		1	2	1					1			5
CNS Stimulants			1									1
Hormones and Derivatives			1	2								3
Solvents (kerosene, brake fluid, & charcoal lighter)		2	2					1			1	5
Insecticides			3			1						5
Household Articles (antiseptics and air deodorants)		1									1	2
Miscellaneous (wild mushrooms, scorpion bite, cyanide gas and cathartics)				1					1	2		4
Total	0	4	10	4	1	1	0	1	2	3	2	28

Eight additional Poison Gas Reports for June have been received by the Poison Control Center. These bring the total cases reported to the Center to 51, for June, in Arizona. Five of the reports involved children between the age of one and five. Aspirin and kerosene were the main offenders.

The Poison Control Center appreciates the wonderful cooperation of the Arizona Physicians and hospitals in reporting poison cases. If more report blanks are needed, or if there are questions or suggestions, please send a note or call the Poison Control Center at the College of Pharmacy, University of Arizona.

AMERICAN CANCER SOCIETY RESEARCH

A — Prostatic Cancer

A BOSTON University pathologist has uncovered evidence that production of female hormone — rather than male hormone, as is generally supposed — is responsible for both enlargement and cancer of the prostate.

The unexpected results of this research by Dr. Sheldon C. Sommers of the Boston University School of Medicine were reported by the Massachusetts Division of the American Cancer Society.

Dr. Sommers based his findings on the post mortem microscopic examination of the various hormone-producing glands from 223 men with prostatic cancer and from 223 men without any kind of cancer. He determined the number and condition of cells which produce various kinds of hormones and studied tissues on which male and female hormones act.

Eighty per cent of the men who had died with prostatic cancer had produced enough estrogen to enlarge their prostates, even though, in most cases, cells which produce chiefly male hormone, had withered away. Among the noncancerous controls, only 45 per cent showed prostatic enlargement, considered a sign of pre-

dominant estrogen production.

The finding that prostatic enlargement was almost twice as common among men with cancer as among the controls, raised speculation that enlargement and cancer of the prostate stem from similar hormonal imbalances. Atrophy of tubes from the testicles in many cancer cases also could indicate uninhibited estrogen production.

The hormonal imbalances found here appear to be a product of the aging process, during which male hormone-producing cells were still highly active.

Other scientists have found that prostatic cancers are very common in aging men, although in many cases they never become bothersome enough to be recognized. One study indicated that the incidence rises sharply during the 60s, and that perhaps 50 per cent of all men over 80 have microscopic prostatic cancer. Ninety per cent of these cancer patients were over 60 and 60 per cent over 70.

B — Cell Culture

A technique which enables scientists to grow single human cells into large colonies has borne its first fruit.

It has given rise to the startling possibility that drastic changes take place in their genetic constitution as cells develop and that cells within the same body — and even in the same organ — may contain different genetic makeup.

This was announced by the Colorado Division of the American Cancer Society in reporting on research by Dr. Theodore T. Puck, Professor of Biophysics, (Florence R. Sabin Laboratories) University of Colorado Medical Center. Associated with Dr. Puck in this work are Steven J. Cieciura and Harold W. Fisher.

The University of Colorado scientists modified a system of using an enzyme, trypsin, to dissolve the cement which holds cells together so that they could be separated without injury. In almost all cases it was found possible to grow a single cell into large colonies as easily as other scientists grow colonies of microbes. With this simple and highly successful technique, the research team has developed large masses of tissue from single cells shaken loose from human skin, spleen, lung, liver, bone marrow, brain, muscle, heart, and the (amniotic) tissues which shelter and nourish the human embryo during its nine months of development within the womb.

The scientists earlier found that remarkable differences exist between one cell and its seemingly identical neighbor. For this reason, the technique of growing cell colonies from a single parent cell has become essential in work involving exquisite analysis in such fields as cell heredity, susceptibility and resistance to viruses, radiation effects and the processes of maturation and ageing.

Now the members of the C. U. department of biophysics have observed such distinctive differences between extremely young (fibroblast) cells and highly specialized adult cells within the same organ that they have concluded that the alterations may stem from the very roots of cell life, the genes which govern the inherited characteristics of every cell and of every plant, animal and human.

The findings and their interpretation may even suggest a key to the secrets of ageing. Science generally regards the gene as a stable unit of heredity. It long has been known that genes can be changed by some radiations and chemicals; and scientists have speculated that over the two billion years or so of life on this planet evolutionary forces have changed the genes of the original form or forms of life to produce the various kingdoms, species and races of plant, animal and human life of today. Scientific literature seems to lack any proof, however, that these vast differences, wrought by the ages, could exist in genes of cells only a hair's breadth apart.

In these experiments the investigators grew in laboratory dishes two types of cells: (1) fibroblasts, which resemble the young, fast-growing unspecialized cells which mature eventually into the fibers of connective tissue which forms tough, resilient sheaths for organs and other tissues of the body; and (2) epitheloid cells, similar to those forming the skin and protective lining of various body tracts.

As these single cells developed into colonies, the group observed that they retained their integrity completely — down through the genrations, each offspring cell appeared identical with its single ancestor cell.

The nutritional requirements of fibroblasts and epitheloid cells varied enormously; and it was largely on this observation that the group concluded that the two lines — both from the same organ originally — contained distinctively dif-

(Continued on Page 41A)

When smooth muscle spasm gets rough on your patients

Like oil on troubled waters...

DONNATAL®

provides superior spasmolysis Robins

through provision of natural belladonna alkaloids in optimal ratio, with phenobarbital

Formula

DONNATAL TABLETS
DONNATAL CAPSULES
DONNATAL ELIXIR (per 5 cc.)

Hyoscyamine Sulfate	0.1037 mg.
Atropine Sulfate	0.0194 mg.
Hyoscine Hydrobromide	0.0065 mg.
Phenobarbital (¼ gr.)	16.2 mg.

DONNATAL EXTENTABS®
(Extended Action Tablets)

Each Extentab (equivalent to 3 Tablets) provides sustained 1-tablet effects...evenly, for 10 to 12 hours—all day or all night on a single dose.

A. H. ROBINS CO., INC., RICHMOND 20, VA.

450,000 IN ARIZONA COVERED BY VOLUNTARY HEALTH INSURANCE

THE number of people in Arizona who are covered by voluntary health insurance reached a new high by July 1, the Health Insurance Council reported today. As of this date the council estimates that about 450,000 persons were protected by some form of insurance designed to help pay hospital and doctor bills.

This figure, the council said, is part of the continued growth of health insurance throughout the country, which was revealed last May in its 11th annual survey of the extent of voluntary health insurance coverage for 1956. The number of people covered by some form of health insurance in the nation today is more than 118 million, or over 70 per cent of the U. S. civilian population.

In releasing the findings of its survey, which is based on reports of insurance programs of insurance companies, Blue Cross-Blue Shield and other health care plans, the council went on to say that there were 443,000 persons covered by hospital expense insurance in Arizona as of Dec. 31, 1956. The total for 1955 of the number of persons covered for expenses incurred while in the hospital was 432,000.

Surgical expense insurance, which helps to defray the cost of physicians' charges for operations rose to 404,000, as compared with 377,000 the year before.

Persons protected by regular medical expense insurance, providing for doctor visits for non-surgical care, numbered 137,000 in 1956, as against the previous year's figure of 116,000.

LOCATION OPPORTUNITIES

ASHFORK – Pop. 700 – North centrally located – Railroad center – Contact the Women's Club, Ashfork, Arizona.

BENSON – Excellent opportunity for GP – This David-Benson trade area has about 5,000 population with only one doctor available. A small sleep-in hospital can be set up very easily. Hospital 25 miles away. Chamber of commerce will furnish telephone answering service, nine to five. Contact Bernard Fisher, D.D.S., medical committee of the chamber of commerce, Benson, Arizona.

CAMP VERDE – Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R.N., Camp Verde, Arizona.

FLAGSTAFF – Pop. 17,500 – Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gladly refer work to him). Excellent opportunity for an eye, ear, nose and throat doctor. Contact C. Herbert Fredell, M.D., Secretary, Coconino County Medical Society, 121 East Aspen Avenue, Flagstaff, Arizona.

GILA BEND – Pop, 2,500 – 80 miles west of Phoenix – Nearest town to the Painted Rock Dam Project – Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. $150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Arizona.

GRAND CANYON – Excellent opportunity for GP, age 35-45, surgery desirable, for Grand Canyon, Arizona. Government 5-year contract includes 3-bedroom residence at $40 per month and nurses' quarters plus 12-bed hospital. Contractor provides hospital maintenance and utilities. Contact John S. McLaughlin, Superintendent, Grand Canyon National Park, Grand Canyon, Arizona.

HAYDEN – Pop. 4,000 – Located in southern Arizona. Need for a general practitioner. Have only one doctor available now. Mostly industrial area. Swimming pool, golf course, theatre and social clubs. Has a local clinic, with Ray Hospital 24 miles away. Contact Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

MORENCI – Mining community located near New Mexico-Arizona border – Pop. 10,000. Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PHOENIX – Good opportunity for associate radiologist – Contact Ernest Price, M.D., 9112 N. 2nd Street, Phoenix, Arizona (WI 3-3491).

SAFFORD – In need of GP – Pop. 6,000 – Has ideal year around climate with good schools, park, swimming pool, golf course, Elks Club. Private hospital, open staff. Surgical privileges after six months if qualified. Completely equipped office for rent and equipment for sale. Contact M. T. Sandeno, M.D., 803 Seventh Street, Safford, Arizona.

TUCSON — The VA Hospital is in urgent need of an orthopedic surgeon. They prefer someone who is board certified, but would take someone who has had special training, as they have the local men in this field available for consultation service. State license is necessary, but not necessarily an Arizona license. Contact S. Netzer, M.D., Director, Professional Service, V.A. Hospital, Tucson, Arizona.

YOUNGTOWN — Pop. 130 — Located 16 miles from Phoenix, 4 miles from Peoria, 1½ miles from El Mirage, 1 mile from Surprise, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Arizona.

YUMA — Pop. 15,000 — Situated in the southwest corner of the state on the Colorado River Semi-retired medical doctor, possibly a GP, may work part time or full time. He may do his own surgical procedures or may call upon local surgeons to do surgical procedures. If he would wish, he may be director of the Yuma County Health Unit which is an administrative position. Now paying $6,600 annually for a permanent part time physician. However, it could be revised upward considerably if he would handle his own surgery and the health unit. If interested, contact Mr. R. L. Odom, P. O. Box 1112, Yuma, Arizona.

FOR INFORMATION ON OPPORTUNITIES IN THE FIELD OF INDUSTRIAL MEDICINE, CONTACT:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Arizona.

Charles B. Huestis, M.D., Box 928, Hayden, Arizona.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Arizona.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Arizona.

LOCATION INQUIRIES RECEIVED

FINCH, CHARLIE B., M.D., 2935 Schaul Street, Columbus, Georgia, *GP*. Age 27. 1954 graduate of Duke University Medical School; interned at Duval Medical Center, Jacksonville, Florida; served two years in the Air Force Medical Corps and is now doing a year of general practice residency at Medical Center, Columbus, Georgia. Desires to practice in a partnership, group or clinic, rather than solo general practice. Available sometime after July 1, 1958.

JENSEN, RALPH; M.D., Route 1, Box 431, Shelbyville, Tennessee, *GP*, 1955 graduate of University of Cincinnati. Has completed one year of general surgery at Cottage Hospital, Santa Barbara, California. Possesses an Arizona license. Desires an assistant or associate practice. Available now.

LEE, JAMES JOSEPH, M.D., 6022 Peggy Drive, Louisville, Kentucky, *Ob-Gyn*, Age 36, 1950 graduate University of Louisville Medical School. Has had 2½ years of general practice and will complete 3 years of residency training in November of this year. Interested in an assistant or associate practice.

MICHEL, JULES H., M.D., 1734 E. 72nd Street, Chicago 49, Illinois, *GP*, Age 28. 1954 graduate Chicago Medical School. After internship immediately went into military service where he has just completed 2 years of active duty with Army Medical Corps. Diplomate of the national board. Interested in starting full time general practice in Arizona, either with a group, as an associate with partnership possibilities or a suitable independent general practitioner in a community. Available November 1957.

SABA, PHILLIP Z., M.D., 6127 Prospect Avenue, Dallas, Texas, *GS*, 1947 graduate of Southwestern Medical School. Has just completed residency and is interested in clinical, assistant or associate practice. Available now.

ST. RAYMOND, Bernard Henry, M.D., 968 Wilson Drive, New Orleans, Louisiana, *Ob-Gyn*. 1951 graduate Louisiana State University; has had 3 years of residency training and has completed 2 years of active duty in military service. Interested in clinical, assistant or associate practice. Available September of this year.

New
NEO-SYNEPHRINE®
COMPOUND
Cold Tablets

offer "Syndromatic" Control
in the COMMON COLD, Allergic Rhinitis

Patients breathe, sleep, work and play better with new "syndromatic" action.

Neo-Synephrine Compound Cold Tablets... for... Full "Syndromatic" Relief.

Neo-Synephrine (brand of phenylephrine) and
Thonfedil (brand of thenyldiamine), trademarks reg. U.S. Pat. Off.

Neo-Synephrine Compound *Cold Tablets*

protect patients through the full range of symptoms

Each tablet contains:

NEO-SYNEPHRINE HCl, 5 mg.
Mild, long acting decongestive

controls NASAL STUFFINESS, RHINORRHEA

Acetaminophen, 150 mg.
Effective analgesic and antipyretic

relieves HEADACHE AND ASSOCIATED ACHES AND PAINS

Thenfadil® HCl, 7.5 mg.
Dependable, well tolerated antihistaminic

neutralizes ALLERGIC SENSITIZATION

Caffeine, 15 mg.

counteracts MENTAL AND PHYSICAL LASSITUDE

Dose: **Adults—2 tablets three times daily.**
Children 6 to 12 years—1 tablet three times daily.

Bottles of 100 tablets

Winthrop LABORATORIES
NEW YORK 18, N. Y.

THE ROLE OF THE DOCTOR IN BLUE SHIELD

DR. Fred Sternagel, president of the Iowa State Medical Society, and Dr. James W. Colbert, Jr., St. Louis University's dean of medicine, have offered sound counsel on shaping the course of Blue Shield. Both agree that the future of these plans depend upon the guidance the profession gives to their development.

On the president's page in the Iowa Journal for June, Dr. Sternagel reminded his colleagues that Blue Shield must continue to shape its course in accordance with changing conditions and public demand so that the program would continue to serve as an effective means of budgeting the cost of medical care.

"Blue Shield's job," wrote Dr. Sternagel, "is not yet finished for the spectre of 'socialized medicine' still haunts us. We shall have to cooperate intelligently and unselfishly, if our plan is to protect the dignity of individual enterprise. It is clear that this program cannot continue to maintain leadership in a competitive field unless we work more closely (with it) than ever before."

Meanwhile, in San Francisco, Dr. Colbert told an annual staff day audience at St. Mary's Hospital that "it is absolutely essential that the plans do not get out of the control of the medical profession; if they do, the profession and the welfare of the patient will both suffer."

The thoughts expressed by Drs. Sternagel and Colbert are to the point. They place in sharp perspective the fundamental principle on which Blue Shield plans were organized and must continue to operate. And today, perhaps more than ever before, developments in the health prepayment field necessitate a dedication to the principle of physician control with renewed vigor.

What Dr. Sternagel and Dr. Colbert were saying is clearly and concisely the clue to Blue Shield progress. Their ideas are basic . . . for it is in fact the physician's leadership, guidance, and active participation that are fundamental to the principles and objectives Blue Shield plans were organized to serve. It is obvious, therefore, that the degree to which the profession contributes to the development of Blue Shield is alone the factor determining the extent to which Blue Shield will *serve the profession and the public best.*

With its strong ties to the profession through local medical society sponsorship, Blue Shield plans *can* fully serve both professional interests and the public's need for a satisfactory means to budget medical care costs. And over the years, active physician participation in the affairs of Blue Shield has been encouraged and earnestly sought for the reason that those who administer the plans recognize that in matters of providing health care coverage, it is the physician's judgment, leadership, and counsel that must prevail. It is only under these conditions that health care coverage consistent with the values and traditions of American medicine can continue to flourish and serve the public fully.

NEW FILMS AVAILABLE

AMA PRODUCES NEW FILM FOR THE PUBLIC

"WHAT doctors do as a group is sometimes more important than what they do individually." These are the words of news commentator John Cameron Swazy in setting the stage in a new AMA film for a series of incidents documenting how organized medicine serves Americans everywhere. Swazy is narrator for this 30-minute color film released to medical societies for local showings Sept. 1. The film was premiered Aug. 28 at AMA's Public Relations Institute in Chicago.

Titled "Whitehall 4-1500," the film tells the story behind this phone number, which puts a caller in touch with America's physicians as a group – the American Medical Association headquarters in Chicago. Dramatic, short sequences show how AMA in action helps save youngsters' lives through poison control activities, helps reduce highway deaths, helps place physicians in isolated areas, helps make jobs safer for industrial workers and life better for everyone. It reveals the story of AMA efforts to solve many current health problems, such as alcoholism and mental illness.

"Whitehall 4-1500" tells a positive story unfamiliar to many Americans – a story "behind the headlines," says Swazy. He also says that "shoved to the back pages are items which you and I know are the real news of the day . . . the warm stories of America's innate dignity, its dedication to high ideas . . . the unselfishness and service to others which are the prevailing concepts of our way of life."

MENTAL HEALTH FILMS AVAILABLE FROM AMA

THREE documentary mental health films recently have been added to the AMA film library. (1) "We, The Mentally Ill" – patients at St. Elizabeth's Hospital, Washington, D.C., present drama about mental illness based on the life of Dorothea Lynde Dix, mental health crusader; summarizes existing conditions in mental institutions and dramatic new medicines revolutionizing treatment. (2) "Alcoholism: The Revolving Door" – demonstrates early treatment of acute alcoholism with both phychotherapy and new drug therapy; covers meeting of Alcoholics Anonymous; dramatizes conditions on Skid Row. (3) "Man in Shadow" – dramatic presentation of man's struggle to overcome mental illness, expertly combined with documentary film taken at Cleveland State Hospital where patients are seen at their daily routines; presents one patient's reactions to various forms of treatment.

First two are 16 mm, black-and-white, 30-minute, sound films from the "March of Medicine" television series. Last film is 16 mm, black-and-white, 52 minutes, sound, originally shown on "Armstrong Circle Theater" television program.

5 New Films By the Nat'l. Foundation For Infantile Paralysis

FIVE new films available for showing to professional audiences are announced by the National Foundation for Infantile Paralysis. They are designed to interest physicians, nurses, physical therapists, occupational therapists and students of all professional schools.

(1) Rehabilitation of Respiratory Patients – 1957 – BW – Sound – 16 mm – 12 minutes.

(2) Principles of Artificial Respiration – 1957 – Color – Sound – 16 mm – 29 minutes.

(3) Assistive Devices for the Physically Handicapped – 1957 – Color – Sound – 16 mm – 12 minutes.

(4) Muscle Breathing Patterns in Poliomyelitis – 1956 – Color – Sound – 16 mm – 15 minutes.

(5) The Anatomy of the Hand – Part II – 1956 – Color – Sound – 16 mm – 30 minues.

Three weeks' advance booking is requested for films. Write to: Division of Professional Education, National Foundation for Infantile Paralysis, 301 East 42nd Street, New York 17, New York.

when anxiety and tension "erupts" in the G. I. tract...

IN DUODENAL ULCER

PATHIBAMATE*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (*400 mg.*) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of duodenal ulcer — without fear of barbiturate loginess, hangover or habituation . . . *with* PATHILON (*25 mg.*) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.

*Trademark ® Registered Trademark for Tridihexethyl Iodide Lederle

Lederle LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

Phoenix Clinical Club

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE NO. 25

FIRST admission: A fifteen-year-old girl was admitted to the hospital because of severe frontoparietal headaches, vomiting and loss of vision, beginning about four months before entry. The headaches were accompanied by forceful vomiting, apparently without nausea, were aggravated by walking about and were somewhat relieved by lying down. The headaches occurred with increasing frequency, becoming almost constant by the time of admission. Three weeks before entry, she had a particularly severe headache intensified by any movement of the head, during which there were projectile vomiting, and retraction of the head. The temperature was normal and symptoms disappeared after a few hours in bed, but after this she was drowsier than usual. One week later, she began to complain of ringing in the left ear. She became increasingly irritable. One week before entry, upon arising in the morning, she said she could not see well. During the next few days vision became progressively worse, and she was brought to the hospital.

The patient's birth and early development were not remarkable. As a child she had had chicken pox, measles, mumps and pertussis without serious incident. There had been no head injuries. The menarche had occurred at the age of twelve, and the periods had been normal until the present illness, when the flow became scanty. For several years, she had grown rapidly and was "underweight." Because of this and scholastic difficulties, she was taken out of school one and a half years before entry.

On physical examination, the patient was drowsy, vomited, held her head stiffly in a retracted position, and complained of a left frontoparietal headache. She appeared poorly nourished, and looked younger than her stated age. At the time of admission, she was blind in both eyes, and the pupils were bilaterally 4 mm. in diameter and unreactive to light, but on the following morning, when her general condition was somewhat improved, inconstant light perception was found in the right eye and a visual acuity of 5/200 in the left eye. Examination of the visual fields at that time showed marked peripheral constriction and suggested a nasal hemianopia on the left; the field of the right eye could not be adequately tested. There was bilateral papilledema of about 3 diopters, with pallor of the right disk. Hearing was slightly impaired in the right ear, and on the Weber test, the tuning fork was best heard in the left ear. The cranial nerves were otherwise unremarkable. There were no abnormalities of the motor system. Tendon reflexes were generally sluggish, but brisker in the left leg than in the right. The right plantar reflex was flexor, and the left equivocal. There were no sensory changes. The examination was otherwise within normal limits.

The temperature and blood pressure were normal, and the pulse was 100. Urine and blood studies were negative.

In the hospital ventriculography demonstrated marked dilatation of the lateral and third ventricles, especially of the posterior horns of the lateral ventricles. The posterior part of the third ventricle and the aqueduct and fourth ventricle were not demonstrated. The upper part of the anterior horns were more widely separated from each other than usual. A cerebellar exploration was done, at which the cerebellum was found to be under great tension although the hemispheres felt normal. A catheter was passed via the fourth ventricle along the aqueduct for about 13 cm., where it stopped. Fluid and air injected into the lateral ventricles were thought to appear at the fourth ventricle. The patient returned to the ward in good condition. X-ray treatment totaling 1600 r was given postoperatively over an eight-day period, divided among the frontal lobe, the vertex and the suboccipital region. Meanwhile, there was a further loss of vision. At the time of discharge, on the twenty-

seventh postoperative day, the right eye was totally blind, and there was only light perception in the left eye. The right pupil did not react to light, and the left reacted only slowly. The remainder of the neurologic examination was unremarkable.

Subsequently, the patient was followed in the Out-Patient Clinic. Eight months after discharge she was found to have no vision in either eye, and the pupils did not react to light. Papilledema was no longer present, but there was bilateral optic atrophy. A lumbar puncture revealed clear spinal fluid, under a pressure equivalent to 200 mm. of water, containing 2 lymphocytes per cubic millimeter and a total protein of 49 mg. per 100 cc. Otherwise, she remained in excellent health until four years later, when she had started to have attacks of impaired consciousness lasting a few seconds at a time, in which she saw flashes of yellow light and was unable to hear what was said to her. In a more severe attack, later that year, she fell and bruised her hip. An electroencephalogram showed a bilaterally abnormal record characterized by slow waves and wave spikes. In the following year, she began having generalized convulsions in which she first saw flashes of light "in the left eye," with convulsive activity beginning in the left arm.

Final admission (ten years later, at the age of thirty): In the interval, the patient had had occasional seizures, but had got along fairly well, learning to read Braille and to work at weaving. Seven months before entry, the seizures began to be more frequent, finally occurring once or more often daily. These were described as lapses of consciousness for ten to fifteen minutes, with no convulsive movements. Five hours before admission the patient cried out and was found unconscious with thrashing movements of the left arm lasting one and a half hours, followed by rapid opening and closing movements of the left hand for two hours. The patient remained unresponsive and was brought to the hospital.

On physical examination, she was semicomatose. She was able to move the right arm and leg on command, but the left arm and leg were flaccid and motionless. The fundi showed optic atrophy. The right eye was abducted, and there were wandering movements of both eyes to the right, but neither eye crossed the midline to the left, and there were no upward movements, either spontaneously or on flexion of the head. The pupils were 4 mm. in diameter and were fixed. It was thought that she reacted less vigorously to pinpricks on the left side. The tendon reflexes were sluggish and approximately equal except that the left knee and ankle jerks were slightly brisker than the right. The plantar reflexes could not be obtained. There was a slight erythematous rash on the face and nose and around the eyes. The physical examination was otherwise unremarkable.

The temperature was 103.5°F., the pulse 125, and the respiration 32. The blood pressure was 84 systolic, 62 diastolic.

The blood hemoglobin was 14.5 gm., and the white-cell count 27,900, with 90 per cent neutrophils, 8 per cent lymphocytes and 2 percent monocytes. The urine gave a three plus reaction for albumin; the sediment contained occasional granular casts.

In the hospital continuous jerking movements of the left arm and leg and of the face and neck muscles bilaterally developed. The temperature rose to 105°F., and the patient died fifteen hours after admission. A lumbar puncture performed post mortem showed 3 to 5 lymphocytes per cubic millimeter, a total protein of 52 mg. per 100 cc. and a normal gold-sol curve.

DR. M. W. MERRILL

This case today reminds me of several years ago in the clinical club when I had three discussions during the year, each one of them dealing in one way or another with calcium metabolism. This year, with only two discussions to present, I have found myself with similar subjects again, both of them in rather unfamiliar territory, intracranial lesions. I might also say that they have both been interesting and instructive cases, and even though I will probably miss the diagnosis today, I have enjoyed working on the case.

A brief summary may be in order. This patient, a fifteen year old female, had progressive symptoms for four months before being admitted to the hospital for diagnosis and treatment. These symptoms were definite, severe, and progressive, and one wonders why the delay in seeking help. After four months the patient was hospitalized and a diagnosis of an expanding intracranial lesion made and exploratory surgery performed. The lesion was not found, no pro-

cedure was carried out to relieve the pressure, and X-ray therapy was instituted. Subsequently the patient lived for 15 years, during which time she developed recurrent convulsive seizures which finally led to her death, 15 years after the onset of the disease.

The initial symptoms all pointed to a progressive increase in intracranial pressure without definite localizing signs. These included headache, vomiting without nausea, often projectile, and diminution of visual acuity to a state of blindness. The eye findings will not be reiterated in detail but the picture was one of first, papilledema, at which time some slight visual acuity was present, followed by optic atrophy secondary to the increased pressure and complete blindness. The initial findings of peripheral vasoconstriction and suggested left nasal hemianopia were without definite value as to location of the lesion, but did suggest some right sided radiation either in the temporal, occipital or parietal lobe. Likewise, the initial reflex changes which showed brisker reflexes on the left side, pointed to the probability of more pressure on the right hemisphere.

It is in the ventriculogram findings that we are given the first definite lead in localizing the lesion. Obviously the ventriculogram was the diagnostic procedure of choice. The doctors were dealing with an obscure neurological lesion associated with high brain pressure. In the presence of the latter, pneumoencephalogram is contraindicated because of the risk of increasing the pressure. Also, there was nothing to suggest a lateral or peripheral lesion and therefore arteriography would probably have been of little value. One does wonder why the cerebellar approach was used, as the exploration from this approach found the surgeons a long way from the obstructing lesion. I call it an obstructing lesion because the findings pointed to some lesion located near the posterior aspect of the third ventricle which was exerting obstructive pressure on the aqueduct of Sylvius and producing internal hydrocephalus. This was borne out by the ventriculogram findings which demonstrated marked dilitation of the lateral and third ventricles, particularly the lateral horns of the lateral ventricles and the anterior portion of the third ventricle. The posterior part of the third ventricle was not demonstrated, nor was the fourth ventricle visualized. Further suggestive evidence that the lesion was located near the superior posterior aspect of the third ventricle was the fact that the upper part of the anterior horns of the lateral ventricles were more widely separated than usual. If we can accept the findings of the exploration and the ventriculogram, we can place the location of the lesion in the area of the pineal gland. From this point on then, providing our reasoning is correct to here, we must attempt to show that some lesion arising in or near this gland, caused the clinical problem we are dealing with today.

Before proceeding further with the differential diagnosis, I wish to interject a few remarks about the surgical procedure this girl was subjected to, keeping in mind that the surgery was performed at least prior to 1940 or 1939. The question was raised about the cerebellar approach to this problem. Generally speaking, I am informed, in the face of an increase in the intracranial pressure and with the lesion located above the tentorium, cerebellar decompression adds to the hazards to the patient because of possible herniation through the incisura of the tentorium following the procedure. Another point which has been raised is why relief from the pressure was not attempted by the Torkildsen procedure, a ventriculocisterna magna shunt with polyethylene tubing. I presume that Torkildsen had not described his procedure when this patient was operated upon.

Some consideration should be given at this time to the seizure pattern which developed in this patient. The flashes of yellow light probably represented unformed visual hallucinations arising from involvement of the occipital lobe or lobes. The periods of unconsciousness were probably produced by involvement of the periaqueductal gray matter, and the motor activity of the left hand and arm suggested involvement of the calcarine area of the right occipital lobe. It is my belief that these phenomena represented either extension of the lesion into these areas or atrophy of brain tissue due to vascular impairment produced by the lesion. The final episode of unconsciousness and fever and death suggests progressive involvement by the disease. One finding of interest on the final admission was the failure or paralysis of upward gaze. This is known as Perinaud's syndrome and is produced by lesions arising in the pineal area which compress the quadrigeminal plate of the

mid-brain. I consider this further evidence that we are dealing with a lesion arising in or close to the pineal gland.

Some mention should be made of the electroencephalogram findings. These simply showed bilateral abnormality with no specific localization.

As you have all deduced by now with little difficulty, I am going to rest my case today on the diagnosis of a pineal tumor. I think it obvious that this patient had an expanding lesion, probably malignant. The history of the case suggests that this lesion initially blocked the ventricular system, produced papilledema and secondary optic atrophy, and showed considerable response to irradiation. The fact that the signs of increased intracranial pressure disappeared after x-ray therapy and the fact that the patient lived for nearly fifteen years I believe indicates that this tumor was quite radio-sensitive. I am ruling out third ventricle cysts, cysts of the pineal or any other benign lesion because of the progression and fatal termination of the disease. Malignant lesions arising in the brain adjacent to or nearby the pineal must of course be considered. I am ruling these out principally because the first localizing sign of this disease was blockage of the ventricular system most commonly produced in this area by pineal tumors. Pituitary tumors, and craniopharyngiomas should be thought of, but they do not fit the clinical picture or the findings.

One other point that should be mentioned in the differential diagnosis is that of brain injury following x-ray therapy. In my last case the damage caused following irradiation produced the seizure pattern and eventual death from status epilepticus. In this case the seizure pattern is different. There is less localization and more evidence of a progressive, invasive lesion. Furthermore, the duration of symptoms was much longer than that which follows irradiation damage in the usual case. It is true that the marked symptoms of increased intracranial pressure disappeared after the therapy, and the seizure pattern developed, but for the reasons stated I am ruling out x-ray damage to the brain and hoping I am not overlooking the underlying pathology.

A few words about the pineal gland and pineal tumors and I will conclude this discussion. The gland is located, as I have described, at the posterior and superior extremity of the third vertebral ventricle between the splenium of the corpus callosum and the corpora quadrigemina. It is approximately 7 x 4 mms. in size in the adult and frequently contains a deposition of calcium salts after adolescence. A great deal of work on the physiology of this gland has been done, most of it inconclusive. It is however, considered a definite gland of internal secretion and most likely has something to do with the sexual development, particularly in the male. These tumors are much more common in the male sex, by the way.

Tumors of the pineal gland are usually classified as one of three types depending upon whether they are composed of the pineal cells, which are characteristic in appearance, neurological cells, or they may be of a teratomatous nature. I am not going to attempt to describe the cellular picture of any of these types, nor do I believe it is possible to further classify the lesion under consideration today other than to call it a malignant lesion of the pineal gland. I suppose one should also mention a tuberculoma of this structure, but I do not believe it would have produced this picture, nor show a response to irradiation. In a recent review of tumors arising in the pineal region, it was pointed out that some of the patients lived for as long as 20 years after the diagnosis was made.

My first diagnosis then will be pinealoma, or tumor arising from the pineal gland. Secondly, I would choose a malignant tumor arising in the region of the pineal gland, such as a glioma or neuroblastoma.

DIFFERENTIAL DIAGNOSIS

Dr. Raymond D. Adams: William Gowers, in his admirable monograph, states that "the subject of the diagnosis of disease . . . certainly transcends in complexity, and perhaps exceeds in interest, all other problems in practical medicine." Those who regularly attend these exercises must surely concur in this opinion. For my part, I must confide that while struggling with this case last evening I found myself in sympathy with Gowers concerning the complexity of diagnosis.

The clinical data with which I am presented lead unmistakably to the conclusion that this patient suffered from a brain tumor. The frontoparietal headaches, the forceful vomiting and the papilledema, or "double optic neuritis" as it

was formerly called, are the commonly accepted signs of increased intracranial pressure. Of course, one must at once consider syndromes that simulate brain tumor, so-called pseudotumor syndromes, such as thrombosis of the superior sagittal sinus, aqueductal stenosis and chronic arachnoiditis, but I shall dismiss these possibilities at the moment because they are usually diagnosed only by the exclusion of all other diseases.

This part of the clinical problem is straightforward, but I am sure that Dr. Castleman and Dr. Richardson would not accept such a simple formulation of the case. They require, as all clinicians do, two additional facts in a suspected case of intracranial tumor: one is the location of the lesion, and the other is the nature.

Regarding the location of this pathologic process I must depend on the other clinical and laboratory data. It is noteworthy that focalizing or lateralizing signs were slight or absent. There was no paralysis of the limbs, crude sensory defect or aphasia. In a young person with signs of increased intracranial pressure and no conspicuous lateralizing signs one always thinks first of tumor of the cerebellum, the fourth ventricle or third ventricle, or of hydrocephalus due to congenital or inflammatory stenosis of the aqueduct of Sylvius or a chronic meningitis (adhesive arachnoiditis).

Of the other clinical phenomena, the blindness was probably the most striking finding. It could have been due to a suprasellar craniopharyngioma pressing directly on the optic chiasm. However, the onset relatively late in the course of the illness, some months after headache, the rapid progression of visual impairment, the presence of papilledema with minimal atrophy of optic discs and the constricted visual fields are all characteristic of optic atrophy consequent to high intracranial pressure and papilledema. Thus, blindness provides no certain clue to localization.

The retraction of the head, the intensification of headache on any movement of the head and the stiff neck suggest a threatening cerebellar herniation, though at operation some days later the cerebellar hemispheres were said only to be full and hernia was not mentioned. The drowsiness and slowness of response could be explained by high intracranial pressure. Again, these symptoms lack localizing value. The ringing in the left ear, and the impairment of hearing are of interest, pointing to a disturbance of the eighth nerve or cochlea, but without other signs of disease in this region, one seeks alternative explanations. Bilateral impairment of hearing may be due to a lesion of the inferior colliculi and often occurs in pinealoma. May I ask about hearing in the right ear? Was an audiogram done?

Dr. Edward P. Richardson Jr.: No.

Dr. Adams: Were ocular movements recorded?

Dr. Richardson: They were not described in greater detail than appears in the protocol.

Dr. Adams: Limitation of upward gaze was not noted until the last illness. Did the pupils constrict on attempted convergence?

Dr. Richardson: That was not mentioned.

Dr. Adams: Was the patient able to stand and walk, and was there an ataxia of gait at that time?

Dr. Richardson: No such observation was mentioned.

Dr. Adams: I would attach importance to what I assume was the normal physical development and regular menses up to the time of hospital entry and the lack of polyuria or polydypsia, obesity or precocious puberty. Slight pyramidal-tract signs were present on the left but were not sufficiently prominent to be helpful.

May I see the x-ray films?

Dr. Joseph Hanelin: They are not available.

Dr. Adams: I was going to ask if there was intracranial calcification; if the sella turcica was flattened or enlarged; if the clinoid processes were decalcified; and if there was any sign of a mass occupying the posterior part of the third ventricle.

Dr. Benjamin Castleman: The following is a report of the plain skull films:

There is marked increase in the convolutional markings, and separation of the suture lines. The dorsum sella, as well as the floor of the sella, is gone. The findings are those of marked intracranial pressure without localizing signs.

Dr. Adams: The ventriculogram and subsequent operative exploration of the posterior cranial fossa tell me that the cerebellum was normal and that the fourth ventricle and aqueduct of Sylvius were patent for 13 cm. Do you measure that from the obex of the medulla?

Dr. James C. White: It is about 6 cm. from the obex to the third ventricle. The tip of the catheter presumably passed upward through the foramen of Monro and entered the lateral ventricle.

Dr. Adams: Does that not extend far beyond the aqueduct?

Dr. White: Yes.

Dr. Adams: That is surprising. I may assume, therefore, that the hydrocephalus that was demonstrated was due to an obstruction of the third ventricle, and I must consider the differential diagnosis of benign tumors presenting in the third ventricle. These are suprsaellar craniopharyngioma, colloid cyst and pinealoma.

It is difficult to distinguish these tumors on clinical grounds alone. For this I have the authority of Dandy, whose large experience with this group of tumors was summarized in a small monograph. He states that "tumors of the third ventricle usually cause advanced pressure but with few exceptions produce no accurate localizing signs. All efforts to develop a diagnostic syndrome of neurological signs and symptoms have been unsuccessful." Yet he concedes that there are several findings that lead to suspicion: for the suprasellar craniopharyngioma, onset often in children and adolescents, visual disturbance (bitemporal hemianopia or other field defects), headache and vomiting, retardation in growth and sexual development and suprasellar calcification; for the colloid cyst and other benign intraventricular tumors, onset of colloid cyst in adult life, other tumors at any time, headache and mental deterioration, blindness and ataxia later, episodic headache with blindness and bilateral paresthesias and weakness of legs, at times influenced by posture; and for the pinealoma, onset in childhood, adolescence and adult life, headache and vomiting, paralysis of upward gaze, dilated fixed, often unequal pupils, abnormal movements of limbs (that is, chorea or ataxia of trunk and limbs), bilateral impairment of hearing, occasionally sexual precocity and blindness late in illness.

Since I have not heard of or seen a colloid cyst in a fifteen-year-old person, the differential diagnosis is between the other two lesions. There were no crucial data that permit a definite diagnosis of either pinealoma or crainopharyngioma. In favor of pinealoma is good response to x-ray therapy, failure of posterior part of the third ventricle to fill, tinnitus and deafness and relatively late affection of vision.

I assume that the neurosurgeons made a diagnosis of pinealoma, for they gave x-ray treatment and made no attempt to operate. Most neurosurgeons regard the pinealoma as inoperable. Evidently, the hydrocephalus was relieved either as a result of x-ray therapy or by some other means, and the patient did well for several years.

The seizures that occurred in the last ten years of life were surely due to a supratentorial lesion. Was it the result of the puncture lesions created by ventriculography, or had the tumor enlarged and encroached upon adjacent parts of parietal and occipital lobes? I cannot decide on this. I believe we have seen cases at autopsy in which the scar of ventricular punctures was the only explanation of epilepsy. Of interest are the flashes of light in the left eye – which indicated that the lesion involved visual structures in the right cerebral hemisphere, probably the occipital lobe. By central excitation of visual centers or pathways these flashes of light could occur even though the patient was blind from disease of the optic nerves, an unusual circumstance.

I think the differential diagnoses are suprasellar craniopharyngioma, colloid cyst and pinealoma, all of which can cause flattening and enlargement of the roof of the anterior part of the third ventricle, with pressure on the sella and its contents. I take it there was some erosion, which could have been due to increase in the intracranial pressure with no great enlargement of the sella, no destruction of the tissue and no calcification. The best I can do with this is to exclude the pseudotumor syndromes, a diagnosis that one arrives at almost by a process of exclusion, and make a positive diagnosis of a third-ventricle tumor. I should favor pinealoma over craniopharyngioma I should expect that there was some degree of hydrocephalus but that it was not the cause of death. I expect that the tumor that will be demonstrated did not seriously obstruct cerebrospinal-fluid circulation.

Death was, in my opinion, due to status epilepticus. Until this last series of convulsions we must assume that the patient was using the left arm and leg properly, was not having headaches and was not deteriorating mentally. In

her comatose state the failure to move the left arm and leg could have been due either to a postepileptic paralysis or to a slight motor deficit that had existed since the first admission and had become manifest during coma. The fever and leukocytosis could be attributed to the seizures.

Dr. White: At the time that we took the ventriculograms we could not be sure that the questionable defect in the posterior portion of the third ventricle was not caused by incomplete air filling and that disease in the fourth ventricle could be excluded; that was why the exploration was done. No abnormality was found there. We thought the patient had a tumor lying either in the brain stem just below the third ventricle or just above the aqueduct in the region of the pineal body; that is why she was given x-ray treatment.

Dr. Adams: The posterior part of the third ventricle was not well visualized.

Dr. White: The anterior part was, so that one ought to be able to rule out a third-ventricle cyst, which is always situated at its rostral end, but that does not rule out a lesion posteriorly around the aqueduct.

Dr. Jacob Lerman: I should like to ask Dr. Adams if the note that the menstrual flow became scanty and the note about the growth might not mean something – that in some cases it might point to the site of the tumor.

Dr. Adams: With pinealoma in both males and females there may be a precocious sexual development; puberty may occur as early as six to nine years of age. Also, there are occasional cases in which there is merely a general overgrowth of skeleton. The usual effect of a suprasellar craniopharyngioma beginning in the prepubertal child is to retard sexual development and delay menses or prevent them from appearing at all. The clinical picture is one of general infantilism or obesity, with lack of sexual development. Scant menstruation in the last months of life would be difficult to interpret.

CLINICAL DIAGNOSES

Brain tumor, brain stem, roof of third ventricle. Status epilepticus.

DR. ADAMS'S DIAGNOSES

Pinealoma, with obstructive hydrocephalus and consecutive optic atrophy.

Status epilepticus.

ANATOMICAL DIAGNOSES

Pinealoma, astrocytomatous form.

Optic atrophy, bilateral.

Congenital absence of corpus callosum.

(*Status epilepticus.*)

PATHOLOGICAL DISCUSSION

Dr. Castleman: Of course, the main findings were in head; the remainder of the examination showed only pulmonary edema and congestion. The cerebral findings will be discussed by Dr. Richardson.

Dr. Richardson: There was a tumor of the pineal body measuring about 2 by 3 cm., a smoothly rounded mass so situated that it displaced the posterior commissure somewhat downward and pressed lightly on the quadrigeminal plate. A tongue of the tumor tissue projected downward for a short distance into the cerebral aqueduct, and a considerable portion of the tumor bulged forward into the lumen of the third ventricle. In addition, there was marked downward bulging and thinning of the floor of the third ventricle, and both optic nerves and the optic chiasm were stretched and were severely atrophied. Another striking finding in this case was complete absence of the corpus callosum. In its place, there was a thin, membranous structure, apparently devoid of nervous tissue, that formed the roof of the lateral ventricles in the normal location of the corpus callosum. There was also marked dilatation of the ventricular system, particularly of the occipital horns. At lower levels, the aqueduct, fourth ventricle and brain stem were normal.

Microscopically, this tumor was made up of cells that varied to a considerable extent in size but in general were of the same type. Some were round; some were fusiform, with abundant fibrous processes straining in a manner identical to that of glial fibers. No mitoses were seen. The microscopal appearance of the tumor in general suggested a form of astrocytoma. In one section, there was an island of tissue that was similar in structure to the normal pineal body. The widespread presence of glial fibers in the tumor led us to believe that it was a glioma. The structure was too uniform for a teratoma. The combination of groups of large cells and masses of small cells resembling lymphocytes,

often seen in pineal tumors, was not present in this case. We were unable to discover any lesion to which the convulsive seizures might with certainty be attributed. Sections of the cerebral cortex disclosed no abnormalities.

Dr. Adams: It is your impression that death was due to status epilepticus rather than something that happened to the patient?

Dr. Richardson: Yes.

Dr. Allen G. Brailey: Was the absence of the corups callosum congenital?

Dr. Richardson: We believe it was congenital and represented a failure in development that was totally unrelated to the later events.

Dr. Adams: One of the startling discoveries made in the last few years had been that absence or surgical section of the corpus callosum causes no important disturbance of mental function. It is, of course, the major commissural system, between the cerebral hemispheres. Formerly, it was believed that lesions here resulted in profound dementia. Recently, the corpus callosum has been widely incised in a series of cases of epilepsy, and by the most careful tests no change in mental function has been demonstrated. It has also been observed by a number of neuropathologists that the corpus callosum may be absent in patients who have been entirely normal in every way. However, in many cases there have been mental retardation and other signs of developmental defect. The conjunction of a tumor of the pineal body, which is often teratomatous, and congenital absence of corpus callosum is noteworthy.

A Physician: How does Dr. Adams account for the seizures?

Dr. Adams: I shall leave that to your imagination. I do not believe this tumor accounts for seizures beginning with visual aura. I should wonder about the parietal lesion. Dr. White, do you have any explanation?

Dr. White: I was struck by the same situation. The patient had seizures for about ten years. Once in a while severe hydrocephalus can cause seizures, but I doubt that her hydrocephalus was sufficiently severe.

when anxiety and tension "erupts" in the G. I. tract...

IN ILEITIS

PATHIBAMATE*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (*400 mg.*) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of ileitis — without fear of barbiturate loginess, hangover or habituation . . . *with* PATHILON (*25 mg.*) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.

*Trademark ® Registered Trademark for Tridihexethyl Iodide Lederle

Lederle

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

for "This Wormy World"

Pleasant tasting

'ANTEPAR'® brand

PIPERAZINE

SYRUP · TABLETS · WAFERS

Eliminate **PINWORMS IN ONE WEEK**
ROUNDWORMS IN ONE OR TWO DAYS

PALATABLE · DEPENDABLE · ECONOMICAL

'ANTEPAR' SYRUP – Piperazine Citrate, 100 mg. per cc.
'ANTEPAR' TABLETS – Piperazine Citrate, 250 or 500 mg., scored
NEW **'ANTEPAR' WAFERS** – Piperazine Phosphate, 500 mg.

Literature available on request

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

FOR THE ENTIRE RANGE OF RHEUMATIC-ARTHRITIC DISORDERS—from the mildest to the most severe

many patients with MILD involvement can be effectively controlled with

'MEPROLONE'

many patients with MODERATELY SEVERE involvement can be effectively controlled with

'MEPROLONE'

NEW

and NOW for patients with SEVERE involvement

MULTIPLE COMPRESSED TABLETS

'MEPROLONE'

The only meprobamate-prednisolone therapy

the one antirheumatic, antiarthritic that simultaneously relieves: (1) muscle spasm (2) joint inflammation (3) anxiety and tension (4) discomfort and disability.

SUPPLIED: Multiple Compressed Tablets in three formulas: 'MEPROLONE'-5—5.0 mg. prednisolone, 400 mg. meprobamate and 200 mg. dried aluminum hydroxide gel. 'MEPROLONE'-2—2.0 mg. prednisolone, 200 mg. meprobamate and 200 mg. dried aluminum hydroxide gel. 'MEPROLONE'-1 supplies 1.0 mg. prednisolone in the same formula as 'MEPROLONE'-2.

MSD MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PA.

'MEPROLONE' is a trademark of Merck & Co., Inc.

Woman's AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

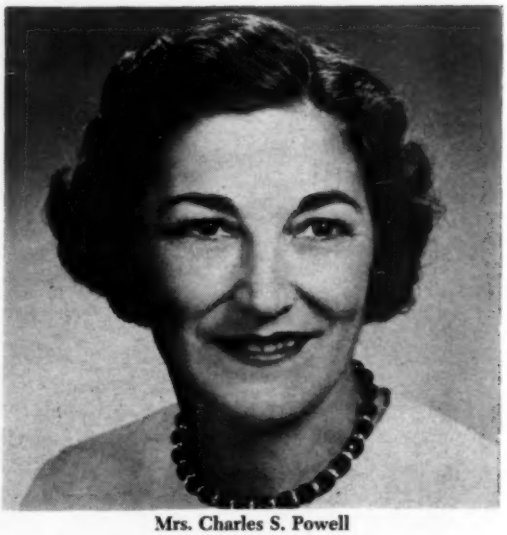
Convention Report — June 1957

THE Roosevelt Hotel in New York City was the headquarters for the 34th annual convention of the Woman's Auxiliary to the American Medical Association, June 3-7, 1957.

On Monday Auxiliary members and guest speakers, specialists in their fields, participated in preconvention panels and round table discussions on legislation, public relations, program, organization, "Today's Health," American Medical Education Foundation, and publications. As your president, I substituted on a bulletin panel for Mrs. Roy Hewitt, Western regional chairman and discussed the topic "Where the Responsibility Lies in Procuring Subscriptions to the Bulletin." The bulletin is a current work book of authentic information and should be familiar to every officer and Auxiliary member. Some states include bulletin subscriptions in their Auxiliary dues. The subscription is tax deductible.

In the afternoon the Woman's Auxiliary to the New York Medical Society was hostess at a tea and fashion show at the Tavern on the Green honoring Mrs. Robert Flanders, national president, and Mrs. Paul Craig, president-elect. Guests included the national board of directors, committee chairmen, state presidents and presidents-elect, and wives of the officers of the AMA. The program and refreshments were furnished through the courtesy of Charles Pfizer and Company.

Mrs. William Phillips, state "Today's Health" chairman, represented Arizona at the third annual "Today's Health" breakfast on Tuesday morning. This is given as an honor to the state Auxiliaries who reached or exceeded 100 per cent of their subscription quota. Three of our counties received recognition in "Tips and Topics", Yuma County in the Most Exclusive group with 564 per cent and Yavapai with 383 per cent and Gila County with 217 per cent in the More Exclusive group. Health education is the objective of this fine publication and each Auxiliary member is urged to see that her husband has a subscription to the magazine in his office. It is estimated that about 33 per cent of the lay subscriptions are bought because the magazine was first seen in a doctor's office. There was an increase of 19,000 subscription credits over last year.



Mrs. Charles S. Powell

Mrs. Flanders presided at the formal opening Tuesday morning. After greetings and presentations, 457 delegates answered roll call with over 1,200 doctors' wives present. The memorial service, which took place at this time, honored the memory of two of our Auxiliary members from Arizona, Mrs. Philip G. Corliss and Mrs. Lamar B. Harper.

At a luncheon in honor of the past presidents, Dr. Howard Rusk, Professor of Physical Medicine and Rehabilitation, spoke on "Sick People in a Troubled World." Dr. Rusk emphasized the role of health programs in promoting international understanding. He stated that activities for people over 65 had decreased psychosis and enriched their lives by giving them a feeling of being needed and useful. Since World War II disabled persons have been given a purpose in life due to the excellent work of re-

habilitation centers. As Auxiliary members we might aid these handicapped people by publicizing their products and arranging for space where they might sell their work.

The Woman's Auxiliary contributed $113,-584.27 to the American Medical Education Foundation. This year there were 35 more counties contributing than last year. An unusual means of raising money was that of collecting a dollar from friends for a "Quiet Evening at Home." This money was given to the AMEF instead of spending it for entertainment. Members are urged to continue using the appreciation and sympathy cards.

We may be of service to our husbands by keeping informed on legislation as it pertains to medicine and by close cooperation with our local and state societies. Dr. Ernest Howard gave a brief roundup of AMA activities and issues considered. A resolution was adopted supporting participation of doctors in pension plans for the self employed, such as the Jenkins-Keogh bill. Occupational health programs were adopted. Those measures pertaining to social security were sent to the resolution committee for action. No action was taken on Medicare. Dr. Howard urged team work with doctors in the state and county in all program planning.

Mr. Frank Barton, AMA secretary for civil defense, stated there was a need for the American people to be informed, trained and organized in civil defense. In discussing the bill, HR 2125, on civil defense, the purpose of which is to reorganize and shift the main responsibility to the federal government, the AMA recommended that a medical scientist be included on the scientific advisory board, and that this board be increased to include representatives from the medical profession, hospital, and public health groups. Emphasis was put on the medical aspects of civil defense, such as the training of personnel for the care of mass casualties, adequate medical supplies, stockpiling of blood, plasma and vaccines, sanitation provisions to cope with communicable diseases and other public hazards. The AMA feels that a strong civil defense requires positive action by the federal government with emphasis on increased federal leadership. Civil defense is an integral part of national defense, and the federal government has a direct responsibility whether it is administered jointly with the states or with the states in a supporting role.

Mrs. Jean Wood Fuller, Director of Women's Activities on Civil Defense, emphasized the need for home, community and state preparedness. There should be food supplies, such as a "grandma's pantry," containing sufficient food and water for seven days and a three-day evacuation survival kit in the trunk of the family car with food, water, blankets, first aid kit, etc. Each community has a responsibility to be prepared with public shelters in case of radiological hazards. In the case of your own home, use might be made of a windowless hallway as a shelter.

The discussion on recruitment brought out suggestions as to how Future Nurse clubs could be of service to their communities, such as making dressings for cancer patients, making toys for hospitalized children, reading to the aged and blind or adopting a "grandparent" whom they could take for walks and help in different ways.

The particular aspects of safety that were stressed were drivers' training programs in high schools, safety in the home, inaugurating bicycle safety programs and safety features on automobiles.

Mrs. Paul Craig, Wyomissing, Pa., was installed as national president at the closing session on Thursday. Her theme for this year is "Health is a Joint Endeavor." Mrs. Craig said it was her hope that the members of the Women's Auxiliary will extend home-making in matters of health into community life just as they practice it for their families.

On Friday morning a post-convention workshop to make plans for the coming year was held for National officers, state presidents and presidents-elect.

Joining me as delegates at the convention were Mrs. Jesse Hamer of Phoenix, Mrs. Melvin Phillips of Prescott and Mrs. William Phillips of Yuma.

Mrs. Charles S. Powell

Col. Frank B. Rogers, head of the National Library of Medicine, told the subcommittee headed by Senator Lister Hill (D., Ala.) that no federal medical agency serves the future of medical research "more intimately and more widely than does the unequalled collection of books, journals and bibliographic services brought together in the National Library of Medicine." Note: the library's operating budget for the next year is $1,450,000.

Weight Control...

Rx DAIRY FOOD

Dairy foods are varied, interesting —not monotonous.
Dairy foods permit maintenance of desired body weight and serve as a basic pattern of eating for a person's entire life.
Dairy foods include acceptable foods with "staying" qualities to prevent hunger.
Dairy foods permit loss of stored fat, where desired, without damage to body structures.
Dairy foods allow pursuit of normal activities with a sense of comfort and well-being.

It's easy for doctors to understand that dairy food diets allow patients to lose weight comfortably and at the same time retain their vigor and stamina.

AMERICAN DAIRY ASSOCIATION OF ARIZONA

dedicated to the health of Arizona's people

(Continued from Page 548)

ferent genetic constitutions. The fibroblasts required for survival and growth not only all the chemicals needed by the epitheloid cells but a number of additional unidentified compounds which exist in embryo extracts.

There were great differences too in the form and behavior of fibroblasts and epitheloid cells. When the two types of cells were grown together in the same laboratory dish, the fibroblasts grew rapidly and moved almost like microbes into the unoccupied spaces of the medium. This crowded out and eventually killed their epitheloid neighbors. When trypsin was added to the medium, this enzyme readily pried the epitheloid cells loose from the glass surface, but it dissolved the stuff cementing fibroblasts to glass only with considerable difficulty.

The properties of epitheloid cells from one organ were so different from epitheloid cells from another organ within the same host as to provoke speculation that the genes of these two cell lines also may be distinctive.

The biophysics group now is studying the physical and chemical behavior of many other types of pure cell lines in various stages of their development and under a variety of disease-inducing states. From these experiments they hope to learn some of the innermost secrets of natural processes, such as ageing, and of the diseases of man. The technique may be of value in determining the difference between useful, highly specialized cells and the useless, parasitical cells of cancer. It may even suggest ways of destroying cancer selectively.

No more late billing...

All-Electric machine makes itemized statement in 4 seconds . . . right from your account cards

No more late billing when you send itemized statements made in just 4 seconds. With the new THERMO-FAX "Secretary" Copying Machine, your nurse or receptionist copies office account cards for only 2¢ per copy. This copy *is* the bill. You save time, simplify your billing . . . and your patients get the itemized statements they want. New All-Electric copy maker costs just $299*. Dry process eliminates chemicals or special installations.

*Suggested retail price.

Thermo-fax COPYING PRODUCTS

The terms THERMO-FAX and SECRETARY are trademarks of Minnesota Mining & Mfg. Co., St. Paul 6, Minn. General Export: 99 Park Avenue, New York 16, N. Y. In Canada: P. O. Box 757, London, Ont.

HUGHES-CALIHAN CORPORATION

1311 N. Central
Phoenix, Arizona
AL 8-3461

417 E. 3rd St.
Tucson, Arizona
MA 4-4372

MEDICAL EQUIPMENT SERVICE

THE ARIZONA MEDICAL EQUIPMENT & SERVICE CO.

All Types And Makes Of Medical & Scientific Apparatus Repaired
Majority of all repair parts in stock and immediately available.
1005-B N. 7th Street, Phoenix, AL 3-9155 or CR 4-4171

MEDICAL SUPPLY DIRECTORY

Arizona Medical Supply Co., Inc.
Phone 3-7581
1027 E. Broadway — Tucson, Arizona
Verna E. Yocum, Pres. George F. Dyer, V. Pres.
M. O. Kerfoot, Sec.

DRIVE-IN PRESCRIPTION WINDOW

PEOPLE'S DRUG STORE

111 E. Dunlap
WE 3-9152 — WI 3-9964

PHENAPHEN® PLUS

Phenaphen Plus is the physician-requested combination of **Phenaphen,** plus an antihistaminic and a nasal decongestant.

Available on prescription only. Robins

each coated tablet contains:	Phenaphen
Phenacetin (3 gr.)	194.0 mg.
Acetylsalicylic Acid (2½ gr.)	162.0 mg.
Phenobarbital (¼ gr.)	16.2 mg.
Hyoscyamine Sulfate	0.031 mg.
plus	
Prophenpyridamine Maleate	12.5 mg.
Phenylephrine Hydrochloride	10.0 mg.

EXCITING NEWS FOR

HARD of HEARING

DOCTOR:

Maico's Newest Hearing Aid with "Automatic Volume Control" Gives Amazing Results For Those Hard-to-Help Nerve-loss Cases. May we Suggest That You Have Your Patient Try It.

MAICO

Hearing Aids—Audiometers

Don't Be Satisfied With Less Than The Best

MAICO of PHOENIX
HEARING SERVICE
212 W. Adams — Ph. AL 8-0270
WE GUARANTEE TO THE DOCTOR AND HIS PATIENT

EICHENAUER NUTRITION CENTER

Arizona's Most Complete Service Institution
Devoted To **Nutrition** — Established 1938
SALT-FREE & ALLERGY FOODS
DIEBETIC FOODS & SPECIALTIES
FRESH FRUIT & VEGETABLES JUICES
ALSO COMPLETE LINE OF

Wm. T. Thompson Co.

STANDARDIZED VITAMINS —
Every Vitamin For Every Need
18 S. Central
PHONE: AL 3-2880 MAIL ORDERS FILLED

WIKLE'S

Specializing In

OFFICE SUPPLIES

22 East Monroe
ALpine 8-1581
Phoenix, Arizona